

Combined Author Index

- Abbaschian, R. 455-463B
 Abilitzer, D. 1001-1010B
 Abuluwafa, H.T. 1633-1641A
 1643-1651A
 Adams, B.L. 229-236A
 Adcock, P.A. 59-68B
 Ågren, J. 303-308A
 Ahmad, Z. 2459-2465A
 Ahmadabadi, M.N. 2159-2162A
 Ahzi, S. 113-122A
 Alers, F. 1633-1641A
 1643-1651A
 Al Omar, A. 2233-2244A
 Albers, M. 2183-2188A
 Alexander, D.J. 335-345A
 Allain, E. 13-23B
 223-233B
 359-369B
 Allen, G.P. 347-361A
 Allison, J.E. 611-620A
 2741-2753A
 Almendras, E. 821-826B
 Altintas, S. 1509-1515A
 Anderson, I.E. 935-941B
 Andrén, H.-O. 1417-1428A
 Angelier, C. 2467-2475A
 Anghaie, S. 2123-2128A
 Anton, D.L. 1797-1808A
 Aoki, K. 2223-2232A
 Aranzabal, J. 1143-1156A
 Ardell, A.J. 991-996A
 2353-2360A
 Argyropoulos, S.A. 135-148B
 Arsenauf, F.J. 2755-2761A
 Arvanitidis, I. 1063-1068B
 Asai, S. 25-32B
 959-961B
 Asgari, S. 1781-1795A
 Atteridge, D.G. 5-14A
 Axelbaum, R.L. 1199-1211B
 Badmos, A.Y. 2189-2194A
 Baek, W.H. 835-839B
 Balanyuk, A.G. 2195-2199A
 Baliko, E. 1993-2003A
 Balson, S.J. 825-835A
 Bamberger, M. 1699-1703A
 Ban-Ya, S. 953-958B
 Banerjee, D. 1735-1743A
 1745-1753A
 Banerjee, S. 2201-2216A
 Baram, J. 2763-2765A
 Barbante, G.G. 811-819B
 Barrallier, L. 851-857A
 Bartlett, R.W. 529-545B
 Bauer, J. 837-842A
 Béchet, J. 2467-2475A
 Beckermann, C. 479-489B
 1165-1183B
 1517-1531A
 1533-1542A
 Bein, S. 2467-2475A
 Bellot, J.P. 1001-1010B
 Bendzask, G.J. 2371-2384A
 Bergman, M.I. 859-866A
 Betancourt, A. 161-168B
 Bewlay, B.P. 2555-2564A
 Bhadeshia, H.K.D.H. 2005-2013A
 2189-2194A
 Bloxham, J. 859-866A
 Boccacini, A.R. 2397-2404A
 Boehlert, C.J. 309-323A
 Boettinger, W.J. 1517-1531A
 Bohn, M. 837-842A
 Bose, S.K. 1189-1198B
 Böttger, A. 63-77A
 545-561A
 Bouchard, D. 651-663B
 Bouchard, M. 825-832B
 Boudot, A. 2015-2025A
 Bourke, M.A.M. 2741-2753A
 Bowen, P. 1357-1365A
 Bowman, R.R. 2755-2761A
 Boyd, J.D. 1437-1443A
 Brocchi, E.A. 39-45B
 Brolund, B. 277-285A
 Bul, R.T. 215-221B
 Bullard, D.E. 447-453B
 517-519B
 1069-1080B
 Burachynsky, V. 563-582A
 Burbielko, A. 115-123B
 Bustnes, J.A. 613-618B
 Butrón-Guillén, M.P. 1755-1768A
 Byrne, J.G. 425-428B
 Cabrera, J.M. 2233-2244A
 Cahoon, J.R. 563-582A
 583-593A
 1245-1250A
 Cai, G.-J. 1417-1428A
 Cain, S.R. 699-708A
 Cannon, P. 1975-1983A
 Caracostas, C.A. 491-502A
 Carsi, M. 1913-1920A
 Castelli, M.G. 347-361A
 Cerri, E. 257-263A
 Chakraborty, A. 979-989A
 Chan, K.S. 79-90A
 411-422A
 1797-1808A
 Chang, J.C. 2113-2121A
 Chang, W.-S. 927-938A
 Chang, Y.a. 435-446A
 1725-1734A
 Chang, Y.W. 1711-1713A
 Charai, A. 851-857A
 Chattopadhyay, K. 2223-2232A
 Chaudhary, A. 1921-1930A
 Chawla, N. 2423-2427A
 Chen, F. 1951-1955A
 Chen, G.L. 1261-1269A
 Chen, G.H. 1689-1698A
 Chen, K.C. 1871-1877A
 Chen, L.H. 325-333A
 401-409A
 435-446A
 1725-1734A
 Chen, S.-L. 503-504A
 927-934B
 Chen, S.M. 325-333A
 Chen, Y. 1115-1121A
 Cheng, C.P. 325-333A
 Cheng, H.S. 491-502A
 Chew, S.J. 333-343B
 Chidambarrao, D. 2515-2525A
 Chiou, W.A. 491-502A
 Cho, S.-A. 1081-1087B
 Cho, W.-D. 429-438B
 Choi, C.H. 2217-2222A
 Choi, N. 429-438B
 Choo, S.-H. 2773-2779A
 Chou, K.-C. 439-445B
 Chu, Y.C. 1667-1687A
 Chuang, T.H. 1367-1376A
 2113-2121A
 2673-2682A
 485-489A
 Chun, B.-S. 2765-2767A
 Chung, C.Y. 2625-2636A
 Chung, H.H. 2527-2536A
 Churley, W.E. 763-773A
 Clarke, A.P. 2565-2576A
 Clausen, B. 2537-2541A
 Cohen, J.B. 527-536A
 Coley, K.S. 275-279B
 Combeau, H. 2705-2714A
 Comstock, R.J., Jr. 2335-2341A
 Cordero, D. 821-826B
 Cortis, M.B. 2477-2484A
 Cotler, C. 1035-1046A
 Cotton, J.D. 673-680A
 Cramb, A.W. 465-472B
 Cui, H. 1261-1269A
 Currier, P. 2129-2135A
 Currier, P.A. 1705-1710A
 Da Costa Viana, C.S. 1755-1768A
 Damkroger, B. 1227-1239B
 Das, R.P. 181-189B
 Das, S. 1607-1616A
 Dasgupta, R. 5-12B
 Datta, R. 721-722A
 Davidson, D.L. 1297-1314A
 1797-1808A
 Davidson, G.A. 843-850A
 Davis, C.L. 1329-1335A
 De Sanctis, M. 1095-1098A
 DeArdo, A.J. 1769-1780A
 DeGraef, M. 1901-1911A
 Degterov, S. 235-242B
 1011-1018B
 1059-1068A
 Del Castillo, L. 595-609A
 Delos-Reyes, M.A. 701-711B
 Demopoulos, G.P. 905-918B
 Dey, G.K. 2201-2216A
 821-826B
 777-784B
 785-793B
 795-804B
 2715-2721A
 547-552B
 619-624B
 223-233B
 359-369B
 1315-1328A
 Doherty, R.D. 1781-1795A
 Dong, M.J. 2245-2254A
 2255-2262A
 Duan, X.J. 1261-1269A
 Dubey, S. 2037-2047A
 Dufaux, D.P. 1199-1211B
 Dutrizac, J.E. 765-776B
 Eagar, T.W. 969-977A
 Earthman, J.C. 763-773A
 979-989A
 1849-1857A
 991-996A
 1781-1795A
 755-762A
 347-361A
 1157-1167A
 2123-2128A
 Erturan, H. 1509-1515A
 Erukhimovitch, V. 2763-2765A
 Ettmayer, P. 837-842A
 Evangelista, E. 257-263A
 Evans, J.W. 59-68B
 69-79B
 Fährmann, E. 1943-1945A
 Fährmann, M. 1943-1945A
 Fan, H.G. 679-688B
 Fang, H.-S. 1617-1623A
 Fang, L. 5-14A
 Farooque, M. 2459-2465A
 Fearn, D.R. 859-866A
 Feidenhansl, R. 237-243A
 Feller, R.J. 1165-1183B
 Felten, J.J. 527-536A
 Feng, J.C. 1385-1390A
 Feng, Q. 33-37B
 Fernandes, J.V. 1169-1179A
 Ferrasse, S. 1047-1057A
 Ferreira, P.J. 277-285A
 Ferro, R. 265-276A
 Field, R.D. 673-680A
 Figliola, R.S. 935-941B
 Filippou, D. 701-711B
 Fine, M.E. 491-502A
 Fitzgerald, T.J. 1377-1383A
 Fitzner, K. 187-190A
 Flandorfer, H. 265-276A
 Flemings, M.C. 2385-2395A
 Flewitt, P.E.J. 2609-2623A
 Foster, B. 1001-1010B
 François, D. 2245-2254A
 2255-2262A
 115-123B
 1921-1930A
 471-483A
 707-719A
 501-508B
 1199-1211B
 293-302A
 919-926B
 47-57B
 639-645B
 1111-1118B
 1963-1973A
 997-1009A
 Fu, H. 843-850A
 Fuchs, G.E. 2543-2553A
 Fujinami, T. 2577-2582A
 Fujita, T. 1195-1203A
 Fujiwara, H. 243-250B
 Fukaya, Y. 1029-1037B
 Gaballah, I. 13-23B
 223-233B
 359-369B
 1661-1665A
 805-810B
 1615-1629A
 547-552B
 619-624B
 2263-2275A
 2277-2289A
 1769-1780A
 39-45B
 2443-2452A
 2195-2199A
 1809-1814A
 2049-2057A
 215-221A
 1553-1567A
 2015-2025A
 51-61A
 1533-1542A
 135-147A
 795-807A
 1399-1415A
 265-276A
 875-883A
 199-206A
 1699-1703A
 1047-1057A
 2453-2458A
 785-793A
 1103-1110B
 13-23B
 1157-1167A
 215-221A
 2195-2199A
 841-853B
 1289-1295A
 1021-1033A
 1517-1531A
 1533-1542A
 5-12B
 1595-1605A
 979-985B
 2049-2057A
 2195-2199A
 1274-1276A
 1123-1131A
 1079-1087A
 245-250A
 649-654A
 997-1009A
 597-604B
 1633-1641A
 1643-1651A
 1143-1156A
 1711-1713A
 713-720B
 5-12B
 979-985B
 169-173B
 1185-1187B
 109-113B
 1079-1087A
 91-104A
 1001-1010B
 2027-2035A
 2405-2414A
 2459-2465A
 681-687A
 1047-1057A
 1281-1288A
 1315-1328A
 1011-1018B
 1815-1829A
 1569-1580A
 1871-1877A
 1809-1814A
 867-874A
 303-308A
 169-173B

Henry, S.	207-213A	Kassner, M.E.	595-809A	1849-1857A	Löfvalder, J.P.A.	1889-1900A
Henshall, G.A.	2555-2584A	Kath, D.	2183-2188A	1867-1887A		1901-1911A
Herlach, D.M.	453-480A	Kattner, U.R.	1517-1531A	877-897B	Logan, R.	2085-2088A
	461-489A	Kaukler, W.F.	1705-1710A	1219-1222A	Lograsso, T.A.	1543-1552A
Hertzman, S.	277-285A		2129-2135A	2731-2740A	Long, H.	2067-2071A
Hess, E.	1001-1010B	Kawabata, H.	409-418B	Lederich, R.J.	López, H.F.	115-123B
Higo, Y.	1341-1346A	Kekesi, T.	987-993B	Lee, B.-J.	Lorentzen, T.	237-243A
Hilpert, K.	2183-2188A	Kematick, R.J.	909-915A	Lee, C.G.		2537-2541A
Hino, M.	953-956B	Kerr, H.W.	687-700B	Lee, C.S.		453-460A
Hirose, A.	2657-2662A	Khan, A.Q.	1281-1288A			461-469A
Ho, S.	989-978B		2459-2485A			649-654A
Hodgson, P.D.	2405-2414A	Khodadadi, J.M.	321-332B	Lee, D.N.	Lu, D.Z.	1123-1131A
Holmeister, W.H.	2485-2497A	Kilbertus, G.	13-23B	Lee, H.-I.	Lu, K.	1233-1243A
Hogan, L.M.	1233-1243A	Kim, C.K.	423-434A	Lee, I.C.	Lu, W.-H.	401-409A
Holden, T.M.	2565-2576A	Kim, C.M.	621-627A	Lee, J.-C.	Lui, T.S.	161-168B
Holt, R.A.	2565-2576A	Kim, D.-K.	2767-2773A		Luiggi, N.	125-133B
Hong, J.K.	223-228A	Kim, D.H.	2595-2608A	Lee, J.-I.		149-159B
Hong, M.-H.	835-839B	Kim, E.-P.	835-839B	Lee, J.B.	Luraschi, A.	821-826B
Hong, S.H.	629-635A	Kim, G.-H.	1251-1259A	Lee, J.H.	Lusk, M.	287-291A
Horita, Z.	2577-2582A	Kim, J.H.	2723-2729A	Lee, K.B.	Lynch, D.C.	447-453B
Hosford, W.	2085-2088A	Kim, J.S.	1223-1231A			517-519B
Howe, J.M.	39-50A	Kim, J.T.	135-147A	Lee, P.-Y.		1069-1080B
Hu, H.	135-148B	Kim, N.J.	504-509A	Lee, S.		1205-1211A
	1185-1187B		1089-1092A		Lyons, J.S.	1569-1580A
Hu, Z.	2143-2147A		2527-2536A		Ma, E.	2577-2582A
Hu, Z.Q.	649-654A	Kim, S.-S.	1019-1028B		Ma, Y.	1931-1942A
	1595-1605A	Kim, W.-H.	679-686B		Ma, Z.Y.	919-926B
Hua, M.	1769-1780A	Kim, Y.	1853-1859A		Maguire, M.C.	309-323A
Huang, J.C.	1859-1869A	Kim, Y.D.	1213-1225B		Majumdar, B.S.	1921-1930A
Huang, X.	2143-2147A	Kim, Y.S.	775-784A		Malas, J.C., III	821-826B
Humbert, B.	51-61A	Kinkus, T.J.	527-536A		Manriquez, J.	2683-2694A
Hwang, S.K.	223-228A	Kiranoudis, C.T.	777-784B		Marder, A.R.	2695-2703A
	2723-2729A		785-793B	Lee, T.K.	Margolin, H.	1069-1077A
Hwang, T.	1115-1121A		795-804B	Lee, W.B.	Marinos-Kouris, D.	777-784B
Ichie, E.	243-250B	Kirkaldy, J.S.	651-663B	Lee, Y.		785-793B
Iguchi, M.	87-94B	Kitou, M.	243-250B	Lei, T.		795-804B
	409-418B	Kleppa, O.J.	187-190A	Lenardi, C.	Maroulis, Z.B.	777-784B
	417-423B	Klueth, R.L.	335-345A	Lengauer, W.		785-793B
	605-612B	Kobayashi, K.F.	2657-2662A	Lesuer, D.R.		795-804B
	1053-1061B	Kobayashi, M.	2637-2644A	Levi, C.G.	Marsh, M.	1115-1121A
	1341-1346A	Kobayashi, T.	2149-2157A		Mataya, M.C.	363-375A
	1241-1248B	Kobayashi, Y.	956-959B	Lewandowski, J.J.	Matlock, D.K.	363-375A
	713-720B	Kocak, M.	199-206A		Matsui, T.	243-250B
Im, Y.H.	401-407B	Kolman, D.G.	2645-2656A	Lexa, D.	Maziasz, P.J.	335-345A
Irons, G.A.	1039-1051B	Komazaki, S.	1945-1949A	Li, B.	Mazumdar, D.	95-102B
Irwin, R.D.	1921-1930A	Kondoh, T.	605-612B			727-732B
Isac, M.	545-561A	Konishi, Y.	25-32B	Li, C.-M.	McMahon, M.E.	1879-1887A
Ishida, A.	1985-1991A		959-961B	Li, D.	McNelly, T.R.	1879-1887A
Ishikawa, T.	1029-1037B	Kontopoulos, A.	777-784B		Medeiros, S.	1921-1930A
Ishikawa, Y.	987-993B		785-793B	Li, F.H.	Medina, E.A.	1921-1930A
Isshiki, M.	987-993B		795-804B	Li, G.	Meghlaoui, A.	215-221B

Munroe, N.D.H.	1995-1000B	Rady, M.A.	943-952B	Segal, V.M.	2309-2321A	Sun, S.	1471-1477A
Murdeswar, N.	2663-2671A	Raghavan, V.	721-722A	Sehtoglu, H.	2763-2765A	Sun, W.R.	649-654A
Murphy, W.H.	2443-2452A	Rak, I.	199-206A		1047-1057A	Sun, Z.Q.	1261-1269A
Murphy, J.S.	721-723B	Ramamurthy, U.	2731-2740A		2263-2275A	Suryanarayana, C.	293-302A
Murty, S.V.S.N.	1581-1582A	Raman, A.	1993-2003A	Sekhar, J.A.	2277-2289A	Susa, M.	2507-2513A
	2170-2173A	Rankin, W.J.	307-319B	Selleby, M.	905-918B	Sutcliffe, J.A.	2555-2564A
Myeong, T.H.	1341-1346A	Rao, B.N.	1581-1582A		563-576B	Svensson, L.-E.	1417-1428A
Myers, C.E.	909-915A		2170-2173A	Semiatin, S.L.	577-596B	Swaminathan, K.	2323-2333A
Na, S.-J.	679-686B	Rao, K.B.S.	347-361A		885-893A	Swamy, K.M.	721-723B
Nagarajan, R.	2223-2232A	Rao, K.P.	2323-2333A		947-954A	Swinbourne, D.R.	811-819B
Nagata, K.	2507-2513A	Rao, P.P.	1457-1470A		2309-2321A	Symons, D.M.	655-663A
Naka, M.	1385-1390A	Rappaz, M.	207-213A		2763-2765A		817-823A
Nakajima, K.	605-612B	Raul, I.A.	1437-1443A	Sen, S.	2129-2135A	Syn, C.K.	1213-1218A
Nakamura, S.	103-108B	Ravichandran, G.	1479-1487A	Shaik, G.R.	895-904A	Szekely, J.	1227-1239B
Nakashima, S.	681-687A	Ravichandran, K.S.	149-156A	Shambien, C.E.	899-903B	Takashima, K.	681-687A
Nakatani, T.	87-94B		157-169A	Shamsuddin, M.	519-522B	Takemori, H.	959-961B
	409-416B	Ray, H.S.	805-810B	Shannon, M.C.	859-866A	Talyanker, M.	1035-1046A
	417-423B	Reddy, A.V.	245-250A	Sharan, A.	465-472B	Tandon, K.N.	1245-1250A
Naoh, H.	1195-1203A	Reese, J.M.	479-489B	Shek, C.H.	1337-1340A	Tang, N.-Y.	2433-2435A
Narayana, K.L.	721-723B	Reid, A.C.E.	491-499B	Shen, B.L.	299-306B	Tang, W.	537-544A
Nasar, A.	519-522B	Rettenmayr, M.	527-536A	Shen, F.	321-332B	Tang, Z.F.	1337-1340A
Nassara, C.L.	855-859B	Rex, S.	447-451A	Shen, Y.	2027-2035A	Tao, D.-P.	725-727B
Nastac, L.	1582-1587A	Reynolds, A.P.	867-874A	Sherby, O.D.	1213-1218A	Taternichi, H.	1053-1061B
Nemoto, M.	2577-2582A	Rhee, M.	1205-1211A		1913-1920A	Tauqir, A.	1281-1288A
Newman, O.M.G.	59-68B	Riendeau, M.P.	2773-2779A	Shi, N.	2741-2753A	Teichmann, C.	837-842A
Nicolaou, P.D.	885-893A	Rigsbee, J.M.	363-375A	Shih, D.S.	79-90A	Thadani, N.N.	1445-1455A
Nikolaenko, I.V.	473-478B	Rios, P.R.	917-925A	Shimojo, M.	1341-1346A	Thakur, A.M.	1445-1455A
	1119-1130B	Riviere, A.	939-946A	Shin, K.	1029-1037B	Thanaboonsombut, B.	2137-2142A
	485-489A	Rnaganathan, S.	1661-1665A		2595-2608A	Thauront, J.	13-23B
Noh, J.-W.	835-839B	Roberts, J.A.	2201-2216A	Shiozawa, K.	2625-2636A	Thaveerungsriporn, V.	2101-2112A
North, T.H.	2371-2384A	Rodriguez-Ibabe, J.M.	1741-2753A	Shoji, T.	1471-1477A	Themelis, N.J.	201-207B
Nourbakhsh, S.	1069-1077A	Rogli, R.	1143-1156A	Sichen, D.	1945-1949A	Thivik, H.J.	665-669B
Noyan, I.C.	2515-2525A	Rohatgi, P.K.	265-276A		827-834B	Thibault, J.	215-221B
Nystrom, J.D.	2443-2452A	Rokhlin, S.I.	245-250A	Simeonov, S.R.	1063-1068B	Thompson, A.W.	817-823A
O'Brien, J.	2085-2088A	Rolseth, S.	1667-1687A	Sing, W.M.	1157-1164B	Thompson, R.B.	91-104A
O'Handley, R.C.	423-434A	Roos, A.	1099-1101B	Singer, R.F.	191-200B	Thomson, R.C.	1329-1335A
Ochoa, J.L.	1081-1087B	Rosenberger, F.	2415-2422A	Singh, A.K.	2323-2333A	Thonstad, J.	1089-1093B
Oden, L.L.	2453-2458A	Roth, H.A.	1705-1710A		1377-1383A		1099-1101B
Ogawa, K.	1985-1991A	Roy, S.K.	1329-1335A		95-102B		1257B
Ogawa, O.	1029-1037B	Ruano, O.A.	1189-1198B	Singh, H.	1735-1743A	Tikas, L.	215-221B
Ogino, Y.	299-306B	Rudolph, V.R.	1913-1920A	Singh, H.	1745-1753A	Tilly, D.J.	1889-1900A
Ohgami, M.	1195-1203A	Ruiz, M.C.	597-604B	Sivaprasad, P.V.	727-732B		1901-1911A
Ohriener, E.K.	2049-2057A	Rumov, G.P.	265-274B	Skybakmo, E.	209-214B	Tjong, S.C.	1098-1101A
Ohta, H.	1131-1139B	Rumov, V.V.	2195-2199A	Smith, A.F.	171-178A		1347-1355A
Okorokov, A.I.	2195-2199A	Ryu, J.H.	81-86B	Smith, R.N.	81-86B		1931-1942A
Olevsky, E.A.	2397-2404A	Ryu, S.H.	1181-1193A	Soboyejo, W.O.	875-883A	Toda, H.	1951-1955A
Olson, G.B.	527-536A	Ryum, N.	1667-1687A		2037-2047A	Todaka, H.	2657-2662A
Ono, H.	633-638B	Sabatini, A.	2583-2593A	Sohn, H.Y.	2583-2593A	Toguri, J.M.	191-200B
Oquab, D.	2015-2025A	Saccone, A.	265-276A		265-274B		847-850B
Padilla, R.	265-274B	Sadoway, D.R.	1141-1149B		1063-1068B	Tokunaga, H.	417-423B
Pal, U.	1227-1239B	Saeglit, M.	377-387A		1157-1164B		1053-1061B
Papassio, N.	777-784B	Sahn, O.	1069-1077A	Sohn, K.-S.	123-134A	Toribio, J.	191-197A
	785-793B	Sahu, K.K.	181-189B	Solheim, A.	81-86B	Toth, L.	1831-1842A
	795-804B	Sakai, T.	401-407B	Solima, A.	1095-1098A	Toth, L.S.	2343-2351A
Paradies, C.J.	875-883A	Sakuma, T.	1843-1847A	Soltanah, M.	647-650B	Tsai, T.C.	2113-2121A
Paramguru, R.K.	805-810B	Salam, I.	1281-1288A	Somardiy, M.	2335-2341A	Tsao, C.-Y.A.	1249-1255B
Paray, F.	1289-1295A	Salama, K.	2059-2065A	Song, H.-S.	485-489A	Tsukihashi, F.	956-959B
Park, C.	1653-1659A	Salas-Morales, J.C.	59-68B		835-839B	Turchanin, M.A.	473-478B
Park, C.G.	1711-1713A	Samant, A.V.	389-399A	Song, S.Y.	1133-1142A		1119-1130B
Park, H.G.	455-463B	Sanchez, G.	2297-2307A	Song, Y.C.	2515-2525A	Uan, J.Y.	401-409A
Park, K.J.	223-228A	Sandenbergh, R.F.	821-826B	Soto, R.	851-857A	Udovenko, V.A.	1133-1142A
	1089-1092A	Sanders, T.H., Jr.	345-350B	Sozinov, A.L.	2195-2199A	Ueda, H.	87-94B
Paspaliaris, I.	777-784B	Sano, N.	2137-2142A	Sprauel, J.-M.	851-857A	Ueda, S.	1151-1155B
	785-793B		103-108B	Sridhar, R.	191-200B	Urcola, J.J.	1143-1156A
	795-804B		633-638B		647-650B	Ushio, M.	509-516B
Peñalba, F.	1011-1018B		861-867B	Srinivasan, R.	1921-1930A	Uskokovic, D.P.	1241-1248B
Peng, H.Y.	1913-1920A	Sano, T.	1151-1155B	Stavastava, D.	2201-2216A	Utigard, T.	821-826B
Peng, Y.G.	955-967A	Santerre, R.	1257-1259B	Starke, E.A., Jr.	1399-1415A	Uwakweh, O.N.C.	517-525A
Petit, C.P.	1111-1114A	Santos, H.	2577-2582A	Stefanescu, D.M.	1582-1587A		743-748A
Philippe, M.J.	639-645B	Sarafianous, N.	215-221B		2129-2135A	Valentini, R.	1095-1098A
Pickles, C.A.	51-61A	Sarma, M.S.	2015-2025A	Steinberg, T.A.	209-214B	Van Aken, D.C.	105-112A
Ping, D.H.	671-677B	Sarveswara Rao, K.	2089-2099A	Sterten, A.	81-86B	Van Den Avyle, J.	1227-1239B
Plekta, B.J.	1595-1605A	Sasthy, S.M.L.	1581-1582A	Steen, L.	1099-1101B	Van Der Wekken, C.J.	2361-2369A
Poirier, D.R.	1479-1487A	Sato, M.	721-723B	Stoltzfus, J.M.	209-214B	van Genderen, M.J.	63-77A
Pollock, T.M.	919-926B	Sato, M.	1199-1211B	Stopic, S.R.	1241-1248B		545-561A
	1943-1945A	Satyamurthy, V.V.	1985-1991A	Strum, M.J.	2555-2564A	Vandermeer, R.A.	749-754A
	2443-2452A	Savas, M.A.	943-952B	Su, L.-H.	927-934B	Vandyousseli, M.	501-508B
Pomfret, R.J.	275-279B	Sawada, Y.	1509-1515A	Su, Y.H.	1249-1255B	Varin, R.A.	179-186A
Potapov, P.L.	1133-1142A	Schiefelbein, S.L.	25-32B	Subhash, G.	1479-1487A	Vaynman, S.	1274-1276A
Poulsen, H.F.	237-243A	Schmid-Fetzer, R.	1141-1149B	Suh, D.	2637-2644A	Vecchio, K.S.	113-122A
Powell, A.	1227-1239B	Schneider, M.C.	1949-1951A		504-509A	Vegter, N.M.	345-350B
Prado, J.M.	2233-2244A	Schoenfeld, S.	1517-1531A		637-647A	Venkadesan, S.	171-178A
Prasad, B.K.	809-815A	Schuster, J.C.	113-122A		1499-1508A	Venkatraman, R.	699-706A
Prioul, C.	2245-2254A	Schwarz, R.B.	1385-1390A	Suh, J.H.	1223-1231A	Venugopal, S.	171-178A
	2255-2262A	Scully, J.R.	1445-1455A	Suito, H.	251-258B		1921-1930A
Prokoshkin, S.D.	1133-1142A	Seetharaman, S.	2645-2656A		259-264B	Verma, A.	69-79B
Przystupa, M.A.	2353-2360A		827-834B	Sukonik, I.M.	1131-1139B	Vieira, M.F.	1169-1179A
Putatunda, S.K.	1457-1470A		1063-1068B	Sun, J.	2763-2765A	Volkman, T.	453-460A
Raabe, D.	2343-2351A		1157-1164B		997-1009A		461-469A
Rabesh, B.M.	2583-2593A		947-954A		1092-1095A	Voros, N.G.	777-784B

Wagnière, J.-D.	785-793B	Williamson, R.L.	841-853B	Yang, H.R.	621-627A	Zhang, J.S.	1261-1269A
Wall, M.A.	795-804B	Wilson, D.B.	209-214B		775-784A		
Wang, F.M.	501-508B	Windle, P.L.	1181-1193A	Yang, J.-L.	1429-1435A	Zhang, N.X.	109-113B
Wang, G.X.	595-609A	Witczak, Z.	179-186A	Yang, X.-W.	725-727B	Zhang, X.M.	785-793A
Wang, G.Z.	109-113B	Wittig, J.E.	2485-2497A	Yang, Z.-G.	1617-1623A	Zhang, Y.	2143-2147A
Wang, H.	333-343B	Woldt, E.	749-754A	Yao, Y.S.	1111-1114A	Zhao, Y.F.	1039-1051B
Wang, J.-J.	1689-1698A	Wolfensteine, J.	1849-1857A	Yasuki, S.-I.	2637-2644A	Zhen, L.	1489-1497A
Wang, L.	917-925A	Wood, W.E.	5-14A	Yazawa, A.	811-819B	Zheng, Y.	2067-2071A
Wang, Q.J.	1617-1623A	Worth, B.D.	825-835A	Yeh, M.S.	1367-1376A	Zheng, Y.-K.	1617-1623A
Wang, R.-Y.	2755-2761A	Wu, C.S.	509-516B	Yen, Y.-W.	927-934B	Zhong, X.	1185-1187B
Wang, Z.G.	1595-1605A	Wu, H.-M.	2353-2360A	Yu, A.B.	333-343B	Zhou, H.Z.	785-793A
Was, G.S.	1233-1243A	Wu, J.S.	729-742A	Yu, H.	1245-1250A	Zhu, S.M.	1098-1101A
Watanabe, H.	665-672A	Wu, P.	1011-1018B	Yu, H.Y.	2499-2506A		1347-1355A
Weckman, D.C.	2101-2112A	Wu, S.D.	665-672A	Yu, J.	629-635A	Zhuang, W.D.	969-977A
Weenink, E.M.	2507-2513A	Wu, X.	1357-1365A	Yu, L.G.	1079-1087A	Zok, F.W.	2731-2740A
Wei, S.-K.	687-700B	Wu, Y.	1059-1068A	Yu, X.	275-279B	Zou, W.H.	955-967A
Wei, Z.G.	201-207B	Wynnyckyj, J.R.	307-319B	Yue, S.	2405-2414A		2765-2767A
Weng, W.P.	439-445B	Xia, D.K.	671-677B	Zaluska, A.	1289-1295A	Zryd, A.	501-508B
Wenschot, P.	955-967A	Xiao, L.	1021-1033A	Zaluzec, M.J.	917-925A	Zuhr, R.	2695-2703A
Wert, J.A.	2673-2682A	Xiao, X.	1157-1164B	Zanner, F.J.	841-853B	Zulli, P.	333-343B
West, D.A.	689-697A	Xing, Z.P.	1079-1087A	Zee, R.H.	2049-2057A	Zuo, Y.	435-446A
White, E.T.	2335-2341A	Xu, J.	1569-1580A	Zeisler-Mashi, K.L.	1543-1552A		
Wilcox, J.R.	229-236A	Xu, K.	2755-2761A	Zeng, K.	1949-1951A		
Williams, J.S.	597-604B	Yamasaki, N.	33-37B	Zenou, V.Y.	1035-1046A		
	599-706A	Yamasaki, T.	299-306B	Zhai, Y.	2371-2384A		
	1115-1121A	Yang, D.Z.	955-967A	Zhang, G.P.	665-672A		

Combined Subject Index

- Abrasion resistance**
Friction and abrasion resistance of cast aluminum alloy—fly ash composites. 245-250A
- Abrasion resistance, Composition effects**
Solidification structure and abrasion resistance of high chromium white irons. 1315-1328A
- Abrasive wear**
Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Abrasive wear, Composition effects**
Solidification structure and abrasion resistance of high chromium white irons. 1315-1328A
- Absorption (material)**
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- Accuracy**
Effect of elastic stress on two-phase binary diffusion couples. 27-38A
Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
A model for calculating interaction coefficients between elements in liquid and iron-base alloy. 109-113B
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
Calculation of solidification-related thermophysical properties for steels. 281-297B
Evaluation of six k - ϵ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
Modeling the discontinuous liquid flow in a blast furnace. 333-343B
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
A mechanics-based approach to cyclic oxidation. 411-422A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool. 509-516B
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel. 629-635A
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂". 723-725B
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
Modeling time dependence of the average interface migration rate in site-saturated recrystallization. 939-946A
Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
A numerical and experimental study of deformation characteristics of the plane strain punch stretching test. 1653-1659A
Influence of limit stress states and yield criteria on the prediction of forming limit strains in sheet metals. 2323-2333A
A new model for the volume fraction of martensitic transformations. 2499-2506A
- Aicicular structure, Composition effects**
Bainitic chromium-tungsten steels with 3% chromium. 335-345A
- Acid leaching**
Steady-state modeling of zinc-ferrite hot-acid leaching. 701-711B
- Acoustic impedance, Orientation effects**
Ultrasonic backscattering in duplex microstructures: theory and application to titanium alloys. 91-104A
- Activation**
Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Activation energy**
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
Kinetic studies of the reduction of FeO and FeWO₄ by hydrogen. 613-618B
Kinetic studies on the dissolution of nitrogen in CaO-Al₂O₃, CaO-SiO₂, and CaO-CaF₂ melts. 633-638B
Kinetics of zinc ferrite formation in the rate deceleration period. 671-677B
Reduction kinetics of liquid iron oxide-containing slags by carbon monoxide. 821-826B
Determination of kinetic parameters using differential thermal analysis—application to the decomposition of CaCO₃. 1157-1164B
An examination of creep data for an Al-Mg composite. 1271-1273A
Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition. 1347-1355A
- Activation energy, Heating effects**
Oxidation of low carbon steel in multicomponent gases. I. Reduction mechanisms during isothermal oxidation. 1633-1641A
Oxidation of low carbon steel in multicomponent gases. II. Reaction mechanisms during reheating. 1643-1651A
- Adhesive wear**
Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Adsorption**
Discussion of "The adsorption kinetics of dicyanoaurate and dicyanoargentate ions in activated carbon" and reply. 345-350B
Surface tension and wettability studies of liquid Fe-Ni-O alloys. 465-472B
- Agglomeration**
Metal extraction from ores by heap leaching. 529-545B
- Aging (artificial)**
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite. 1261-1269A
Deformation and fracture behavior of two Al-Mg-Si alloys. 1489-1497A
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
A study of the mechanism of hardness change of Al-Zn-Mg alloy during retrogression reaging treatments by small angle x-ray scattering (SAXS). 2067-2071A
Development of reproducible and increased strength properties in thick extrusions of low-alloy Al-Zn-Mg-Cu based AA 7075. 2429-2433A
Processing of AA3004 alloy can stock for optimum strength and formability. 2715-2721A
- Aging (artificial), Alloying effects**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Aging (natural)**
Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. 545-561A
- Aircraft components, Materials substitution**
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al₂O₃. 867-874A
Microstructure and mechanical properties of sputter-deposited Cu_{1-x}Ta_x alloys. 917-925A
- Aircraft components, Mechanical properties**
An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply [75]₄ continuous silicon carbide (SCS-8) fiber-reinforced titanium matrix composite. 2583-2593A
- Allotropic transformation**
General existence of ledges on α_1 plates in Cu-Zn-Al alloys. 1617-1623A

- Allotropic transformation, Heating effects**
Bainitic transformation in austempered ductile iron with reference to untransformed austenite volume phenomenon. 2159-2162A
- Allotropic transformation, Microstructural effects**
Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys. 527-536A
- Allotropic transformation, Welding effects**
An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
- Alloys, Crystal growth**
Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots. 943-952B
- Alpha rays**
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Aluminum, Alloying additive**
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases.
Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel. 517-525A
1195-1203A
- Aluminum, Alloying elements**
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts.
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior.
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 251-258B
1735-1743A
1745-1753A
- Aluminum, Bonding**
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Aluminum, Casting**
Characterization of the flow in the molten metal sump during direct chill aluminum casting. 491-499B
- Aluminum, Composite materials**
A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite.
In situ ceramic particle-reinforced aluminum matrix composites fabricated by reaction pressing in the $\text{TiO}_2(\text{Ti})$ -Al-B (B_2O_3) systems. 237-243A
1931-1942A
- Aluminum, Crystal growth**
Dynamics of solid/liquid interface shape evolution near an insoluble particle—an x-ray transmission microscopy investigation. 2129-2135A
- Aluminum, Diffusion**
On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy.
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy.
A modified "hole" theory for solute impurity diffusion in liquid metals.
Element partitioning during coarsening of (γ - γ') Ni-Al-Mo alloys. 257-263A
563-582A
583-593A
1943-1945A
- Aluminum, Extraction**
Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data.
Intelligent control of the feeding of aluminum electrolytic cells using neural networks.
Object-oriented simulation of hydrometallurgical processes. II. Application to the Bayer process.
Activities in the system cryolite-alumina.
Thermodynamics of the system NaF-AlF₃. VII. Non-stoichiometric solid cryolite.
The solubility of ZnO and ZnAl_2O_4 in cryolite melts.
Solutions of CeO_2 in cryolite melts. 81-86B
215-221B
785-793B
1089-1093B
1095-1097B
1099-1101B
1257B
- Aluminum, Mechanical properties**
High-temperature relaxations in aluminum studied by isothermal mechanical spectrometry.
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time.
Numerical simulation of the x-ray stress analysis technique in polycrystalline materials under elastic loading.
Experimental evaluation of a polycrystal deformation modeling scheme using neutron diffraction measurements.
A new miniature mechanical testing procedure: application to intermetallics. 1661-1665A
1831-1842A
2515-2525A
2537-2541A
2577-2582A
- Aluminum, Metal working**
Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- Aluminum, Microstructure**
Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K.
Evolution of recrystallization texture from aluminum sheet cold rolled under unlubricated condition. 595-609A
2217-2222A
- Aluminum, Quinary systems**
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Aluminum, Reactions (chemical)**
Copper removal from carbon-saturated molten iron with Al_2S_3 -FeS flux. 1029-1037B
- Aluminum, Solubility**
Evaluation of interaction coefficient in Al-Cu-H alloy. 625-632B
- Aluminum, Ternary systems**
A thermodynamic description for the ternary Al-Mg-Cu system. Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases.
A thermodynamic description of the Al-Mg-Zn system. Nitridation of Ti-Al alloys: a thermodynamic approach.
Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply.
C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C. 435-446A
517-525A
1725-1734A
1949-1951A
2433-2435A
2453-2458A
- Aluminum, Trace elements**
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Aluminum, Welding**
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool.
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 509-516B
687-700B
- Aluminum base alloys, Casting**
Characterization of the flow in the molten metal sump during direct chill aluminum casting. 491-499B
- Aluminum base alloys, Composite materials**
Friction and abrasion resistance of cast aluminum alloy—fly ash composites.
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy.
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing.
The effect of SiC particulate reinforcement on the creep behavior of 2080 aluminum.
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 .
Investigation of thermal residual stresses in the layered composite using the finite element method and x-ray diffraction.
Interfacial bonding in spray-formed metal matrix composites.
Modeling of solidification of metal-matrix particulate composites with convection.
Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite.
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite.
An examination of creep data for an Al-Mg composite.
Strengthening effects in AC8A/ Al_2O_3 short-fiber composites as a function of temperature and strain rate.
Simulation of crack propagating in discontinuously reinforced metal matrix composite.
Microfracture behavior of Al-SiC composites under dynamic loading.
The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates.
Interfacial characteristics for brazing of aluminum matrix composites with Al-12Si filler metals.
Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite.
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings.
On the creep strengthening of SiC particulates in SiC-Al composites. 245-250A
401-409A
491-502A
611-620A
867-874A
969-978B
1095-1098A
1165-1183B
1251-1259A
1261-1269A
1271-1273A
1859-1869A
2149-2157A
2162-2170A
2625-2636A
2673-2682A
2741-2753A
2773-2779A
2780-2782A
- Aluminum base alloys, Crystal growth**
Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot.
Models for the isothermal coarsening of secondary dendrite arms in multicomponent alloys.
Faceted growth of silicon crystals in Al-Si alloys.
Solidification of hypereutectic Al-38 wt.% Cu alloy in microgravity and in unit gravity.
In situ studies of precipitate formation in Al-Pb monotectic solidification by x-ray transmission microscopy.
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 479-489B
1185-1187B
1233-1243A
1245-1250A
1705-1710A
1735-1743A

- The effect of cooling rate from the melt on the recrystallization behavior of aluminum alloy 6013. 2137-2142A
- Aluminum base alloys, Directional solidification**
Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
- Aluminum base alloys, Extrusion**
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Aluminum base alloys, Mechanical properties**
The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified L_2 titanium trialuminide. 179-186A
Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity. 1157-1167A
The effect of strontium on the Mg_2Si precipitation process in 6201 aluminum alloy. 1289-1295A
Corrosion fatigue crack growth behavior of a squeeze-cast Al-Si-Mg-Cu alloy with different precrack histories. 1471-1477A
Deformation and fracture behavior of two Al-Mg-Si alloys. 1489-1497A
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling. 1815-1829A
Stress corrosion cracking of superplastically formed 7475 aluminum alloy. 2113-2121A
Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
Effect of impurity hydrogen on the deformation and fracture in an Al-5 mass% Mg alloy. 2291-2295A
Development of reproducible and increased strength properties in thick extrusions of low-alloy Al-Zn-Mg-Cu based AA 7075. 2429-2433A
A new miniature mechanical testing procedure: application to intermetallics. 2577-2582A
- Aluminum base alloys, Metal working**
Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- Aluminum base alloys, Microstructure**
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
Microstructure and properties of duplex δ - $Al_3(Ti, V)/\beta$ -Ti, V alloys. 927-938A
The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
Microtexture and grain boundary evolution during microstructural refinement processes in Supral 2004. 1879-1887A
- Aluminum base alloys, Phase transformations**
Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Aluminum base alloys, Powder technology**
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
Superplastic behavior of spray-deposited 5083 Al. 1059-1068A
- Aluminum base alloys, Solubility**
Evaluation of interaction coefficient in Al-Cu-H alloy. 625-632B
- Aluminum base alloys, Structural hardening**
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. 257-263A
Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy. 1205-1211A
Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy. 1399-1415A
A study of the mechanism of hardness change of Al-Zn-Mg alloy during retrogression reaging treatments by small angle x-ray scattering (SAXS). 2067-2071A
Latent hardening behavior of monocrystalline Al-Mg solid solution. 2353-2360A
Processing of AA3004 alloy can stock for optimum strength and formability. 2715-2721A
- Aluminum base alloys, Welding**
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool. 509-516B
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
CO₂ laser beam welding of 6061-T6 aluminum alloy thin plate. 2657-2662A
- Aluminum bronzes, Bonding**
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Aluminum bronzes, Magnetic properties**
A new nickel-aluminum bronze alloy with low magnetic permeability. 689-697A
- Aluminum bronzes, Mechanical properties**
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
- Aluminum compounds, Composite materials**
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
Particle penetration during spray forming and Co injection of Ni₃Al+B/Al₂O₃ intermetallic matrix composite. 877-897B
Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route. 1069-1077A
Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
Dislocations in continuous filament reinforced W/NiAl and Al₂O₃/NiAl composites. 2755-2761A
- Aluminum compounds, Crystal growth**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
Analysis of grain growth in a two-phase gamma titanium aluminide alloy. 947-954A
Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Aluminum compounds, Mechanical properties**
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified L_2 titanium trialuminide. 179-186A
Crystallographic study of fatigue cracking in Ni₃Al(CrB) single crystal. 665-672A
Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys. 795-807A
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
Fracture toughness of polycrystalline NiAl from finite-element analysis of miniaturized disk-bend test results. 991-996A
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
Fractal fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
Effects of microstructure on the fracture toughness of Ti₃Al-based titanium aluminides. 1357-1365A
Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. 2309-2321A
A new miniature mechanical testing procedure: application to intermetallics. 2577-2582A
- Aluminum compounds, Microstructure**
Microstructure and properties of duplex δ - $Al_3(Ti, V)/\beta$ -Ti, V alloys. 927-938A
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
The antiphase boundary energies of L_{12} ordered Ni_{74.5}Pd₂Al_{23.5} alloy. 1092-1095A
- Aluminum compounds, Phase transformations**
Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Aluminum compounds, Powder technology**
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
Microprecipitation synthesis of tough NiAl alloys. 905-918B
Direct consolidation of γ -TiAl-Mn-Mo from elemental powder mixtures and control of porosity through a basic study of powder reactions. 2723-2729A
- Aluminum compounds, Reactions (chemical)**
Thermodynamics of calcium and oxygen in molten Ti₃Al. 956-959B
Thermodynamics of the system NaF-AlF₃. VII. Non-stoichiometric solid cryolite. 1095-1097B
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
- Aluminum compounds, Thermal properties**
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al. 2183-2188A
- Aluminum oxide, Composite materials**
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al₂O₃. 867-874A
Particle penetration during spray forming and Co injection of Ni₃Al+B/Al₂O₃ intermetallic matrix composite. 877-897B

- Fabrication of Al_2O_3 -reinforced Ni_3Al composites by a novel in situ route. 1069-1077A
- Strengthening effects in $AC8A/Al_2O_3$ short-fiber composites as a function of temperature and strain rate. 1859-1869A
- Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Interfacial characteristics for brazing of aluminum matrix composites with Al-12Si filler metals. 2673-2682A
- Dislocations in continuous filament reinforced W/NiAl and Al_2O_3 /NiAl composites. 2755-2761A
- Aluminum oxide, Crystal growth**
- Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
- Aluminum oxide, Extraction**
- Object-oriented simulation of hydrometallurgical processes. II. Application to the Bayer process. 785-793B
- Aluminum oxide, Reactions (chemical)**
- Dissolution of alumina in mold fluxes. 275-279B
- Kinetic studies on the dissolution of nitrogen in $CaO-Al_2O_3$, $CaO-SiO_2$, and $CaO-CaF_2$ melts. 633-638B
- The effect of silica-containing binders on the titanium/face coat reaction. 919-926B
- Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Activities in the system cryolite-alumina. 1089-1093B
- The solubility of ZnO and $ZnAl_2O_4$ in cryolite melts. 1099-1101B
- Solutions of CaO_2 in cryolite melts. 1257B
- Aluminum oxide, Reduction (chemical)**
- Intelligent control of the feeding of aluminum electrolytic cells using neural networks. 215-221B
- Aluminum oxide, Solubility**
- Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data. 81-86B
- Ammonia, Reactions (chemical)**
- The electrochemical behavior of gold in ammoniacal solutions at 75°C. 5-12B
- Ammonia pressure leaching**
- The electrochemical behavior of gold in ammoniacal solutions at 75°C. 5-12B
- Ammonia pressure leaching, Vibration effects**
- Influence of ultrasound in ammoniacal leaching of a copper oxide ore. 721-723B
- Amorphization, Deformation effects**
- Amorphization reaction of Ni-Ta powders during mechanical alloying. 1429-1435A
- Amorphous structure**
- Microstructure of Ti-48.2 at.% Ni shape memory thin films. 1985-1991A
- Amorphous structure, Deformation effects**
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Amorphization reaction of Ni-Ta powders during mechanical alloying. 1429-1435A
- Anion exchanging**
- Preparation of ultra-high-purity copper by anion exchange. 987-993B
- Anisotropy**
- Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- Annealing**
- Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy. 63-77A
- The Ce-Mg-Y system. 265-276A
- Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Microstructure and mechanical properties of sputter-deposited $Cu_{1-x}Ta_x$ alloys. 917-925A
- Analysis of grain growth in a two-phase gamma titanium aluminate alloy. 947-954A
- Fabrication of Al_2O_3 -reinforced Ni_3Al composites by a novel in situ route. 1069-1077A
- Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
- High-temperature relaxations in aluminum studied by isothermal mechanical spectrometry. 1661-1665A
- Anode sludge, Smelting**
- Thermodynamic modeling of selenide matte converting. 811-819B
- Anodic dissolution**
- Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Antiphase boundaries, Alloying effects**
- The antiphase boundary energies of $L1_2$ ordered $Ni_{74.5}Pd_{25.5}Al_{23.5}$ alloy. 1092-1095A
- Argon oxygen decarburizing**
- Influence of chromium and nickel on the dissociation of CO_2 on carbon-saturated liquid iron. 639-645B
- Atmospheric corrosion**
- Estimation of atmospheric corrosion of high-strength, low-alloy steels. 1274-1276A
- Atomizers**
- A numerical investigation of gas flow effects on high-pressure gas atomization due to melt tip geometry variation. 935-941B
- Atomizing**
- A numerical investigation of gas flow effects on high-pressure gas atomization due to melt tip geometry variation. 935-941B
- Superplastic behavior of spray-deposited 5083 Al. 1059-1068A
- Modeling of solidification of molten metal droplet during atomization. 1249-1255B
- Auger electron spectroscopy**
- Effect of copper addition on consolidating Ti_6Si_3 by the elemental powder-metallurgical method. 223-228A
- Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Austempering**
- Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Influence of microstructure on fracture toughness of austempered ductile iron. 1457-1470A
- Bainitic transformation in austempered ductile iron with reference to untransformed austenite volume phenomenon. 2159-2162A
- Austenite**
- Authors' reply to "The effect of the thermal path to reach isothermal temperature on transformation kinetics" by Dr. I.A. Wierszykowski. 1098A
- The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
- Austenite, Deformation effects**
- A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Austenite, Heating effects**
- Microstructural evolution during thermomechanical processing of a Ti-Nb interstitial-free steel just below the A_3 temperature. 1437-1443A
- Bainitic transformation in austempered ductile iron with reference to untransformed austenite volume phenomenon. 2159-2162A
- Austenitic stainless steels, Composite materials**
- Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Austenitic stainless steels, Joining**
- Computer simulation of multicomponent diffusion in joints of dissimilar steels. 303-308A
- Austenitic stainless steels, Machining**
- The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
- Austenitic stainless steels, Mechanical properties**
- High-temperature crack growth in 304 stainless steel under mixed-mode loading conditions. 763-773A
- Study of inclusions in a failed aero-engine component. 1281-1288A
- Austenitic stainless steels, Metal working**
- Controlled drawing to produce desirable hardness and microstructural gradients in alloy 302 wire. 363-375A
- Austenitic stainless steels, Microstructure**
- Texture development in dual-phase cold-rolled 18% Ni maraging steel. 2459-2465A
- Austenitic stainless steels, Oxidation**
- A mechanics-based approach to cyclic oxidation. 411-422A
- Austenitic stainless steels, Structural hardening**
- Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
- Austenitic stainless steels, Thermal properties**
- Calculation of solidification-related thermophysical properties for steels. 281-297B
- Austenitizing**
- Identification and range quantification of steel transformation products by transformation kinetics. 5-14A
- High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A

- Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- The effect of the austenitizing heat-treatment variables on the fracture toughness of high-speed steel. 2089-2099A
- Automotive bodies, Materials substitution**
- On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 . 867-874A
- Automotive components, Materials substitution**
- On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 . 867-874A
- Axial stress**
- High-temperature crack growth in 304 stainless steel under mixed-mode loading conditions. 763-773A
- Plastic deformation of hafnium under uniaxial compression. 1479-1487A
- Backscattering**
- Microstructure and properties of duplex $\delta-Al_3(Ti, V)/\beta-Ti, V$ alloys. 927-938A
- Bacterial leaching**
- Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur. 25-32B
- Metal extraction from ores by heap leaching. 529-545B
- Bainite, Heating effects**
- Influence of microstructure on fracture toughness of austempered ductile iron. 1457-1470A
- Bainitic transformation in austempered ductile iron with reference to untransformed austenite volume phenomenon. 2159-2162A
- Ball milling**
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Ball milling, Temperature effects**
- Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system. 1569-1580A
- Barium compounds, Solubility**
- Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and $CaO_{solid}-B_2O_3$ slags. 1257-1259B
- Baths**
- Establishment time of liquid flow in a bath agitated by bottom gas injection. 605-612B
- Bauxite, Reduction (chemical)**
- Object-oriented simulation of hydrometallurgical processes. II. Application to the Bayer process. 785-793B
- Bayer process**
- Object-oriented simulation of hydrometallurgical processes. II. Application to the Bayer process. 785-793B
- Bearing steels, Mechanical properties**
- Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- Bearing steels, Steel making**
- Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Bearings, Materials selection**
- Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
- Bend tests**
- The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
- Fracture toughness of polycrystalline NiAl from finite-element analysis of miniaturized disk-bend test results. 991-996A
- Beryllium, Welding**
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Beryllium compounds, Trace elements**
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Billets, Casting**
- Evaluation of six $k-\epsilon$ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Binary systems, Phases (state of matter)**
- Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
- A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
- Phase equilibria in the titanium-oxygen system. 447-453B
- Enthalpies of formation of liquid (copper-manganese) alloys. 473-478B
- Studies on the thermodynamic stability of silver selenide. 519-522B
- Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂". 723-725B
- Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Reaction diffusion and phase equilibria in the V-N system. 837-842A
- The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution. 909-915A
- Detailed assessment of integral thermodynamic quantities of liquid Bi-Sn alloy solution system. 1081-1087B
- C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C. 2453-2458A
- Binders (adhesives), Reactions (chemical)**
- The effect of silica-containing binders on the titanium/lace coat reaction. 919-926B
- Bismuth, Binary systems**
- Detailed assessment of integral thermodynamic quantities of liquid Bi-Sn alloy solution system. 1081-1087B
- Bismuth base alloys, Thermal properties**
- Detailed assessment of integral thermodynamic quantities of liquid Bi-Sn alloy solution system. 1081-1087B
- Bismuth compounds, Powder technology**
- Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Blast furnace chemistry**
- Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal. 47-57B
- Blast furnace practice**
- Nonwetting flow of a liquid through a packed bed with gas cross-flow. 597-604B
- Blast furnaces**
- Copper losses and thermodynamic considerations in copper smelting. 191-200B
- Modeling the discontinuous liquid flow in a blast furnace. 333-343B
- Blister copper, Refining**
- Interfacial phenomena in the liquid copper-calcium ferrite slag system. 401-407B
- Blistering, Radiation effects**
- On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Blowing**
- Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
- Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
- Bonding strength**
- Interfacial bonding in spray-formed metal matrix composites. 1095-1098A
- Bonding strength, Pressure effects**
- Effects of applied pressure on the brazing of superplastic Inconel 718 superalloy. 1367-1376A
- Borides, Composite materials**
- Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- In situ ceramic particle-reinforced aluminum matrix composites fabricated by reaction pressing in the TiO₂(Ti)-Al-B (B₂O₃) systems. 1931-1942A
- Fatigue and fracture of damage-tolerant in situ titanium matrix composites. 2037-2047A
- Boron compounds, Solubility**
- Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and $CaO_{solid}-B_2O_3$ slags. 1257-1259B
- Boron steels, Mechanical properties**
- Effect of the Ti/N ratio on the hardenability and mechanical properties of a quenched-and-tempered C-Mn-B steel. 2027-2035A
- Bottom blown converters**
- Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
- Brasses, Coatings**
- Analysis and prevention of cracking phenomena occurring during softfacing of brass on AISI 4140 steel substrate. 2767-2773A
- Brasses, Microstructure**
- A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Brasses, Structural hardening**
- Strain hardening regimes and microstructural evolution during large strain compression of low stacking fault energy fcc alloys that form deformation twins. 1781-1795A

Brinelling		
Wear characteristics of TiNi shape memory alloys.	1871-1877A	
Brittle fracture, Alloying effects		
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A	
Brittle fracture, Composition effects		
Hydrogen embrittlement of Ni-Cr-Fe alloys.	655-663A	
Brittle fracture, Cooling effects		
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A	
Brittle fracture, Microstructural effects		
Fractal fracture and transformation toughening in CuNiAl single crystal.	1337-1340A	
Effects of microstructure on the fracture toughness of Ti ₃ Al-based titanium aluminides.	1357-1365A	
Brittleness, Alloying effects		
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A	
Brittleness, Deformation effects		
Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy.	2309-2321A	
Brittleness, Welding effects		
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel.	504-509A	
Bronzes, Powder technology		
Supersolidus liquid-phase sintering of prealloyed powders.	1553-1567A	
Bubbles		
Development of a multineedle electroresistivity probe for measuring bubble characteristics in molten metal baths.	409-416B	
Bubble and liquid flow characteristics in a Wood's metal bath stirred by bottom helium gas injection.	1053-1061B	
Bubbles, Dimensional analysis		
The shape of bubbles rising near the nozzle exit in molten metal baths.	417-423B	
Burgers vector, Deformation effects		
Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K.	595-609A	
Cadmium, Dopants		
Influence of short circuiting on the kinetics and mechanism of iodide film growth on Ag and Cd-doped Ag.	1189-1198B	
Cadmium, Mechanical properties		
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time.	1831-1842A	
Cadmium base alloys, Microstructure		
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys.	651-663B	
Calcines, Reduction (chemical)		
Rate control of the flash reduction of zinc calcines.	201-207B	
Calcium, Quaternary systems		
An assessment of the Ca-Fe-O-Si system.	577-596B	
Calcium, Reactions (chemical)		
Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the CrO-Cr ₂ O ₃ -SiO ₂ -CaO system.	235-242B	
Thermodynamics of calcium and oxygen in molten Ti ₃ Al.	956-959B	
Deoxidation equilibria of calcium and magnesium in liquid iron.	1131-1139B	
Calcium carbonate, Reactions (chemical)		
Determination of kinetic parameters using differential thermal analysis—application to the decomposition of CaCO ₃ .	1157-1164B	
Calcium compounds, Powder technology		
Improvement of properties of BSCCO superconductor tapes with thermal processing.	425-428B	
Calcium compounds, Reactions (chemical)		
Interfacial phenomena in the liquid copper-calcium ferrite slag system.	401-407B	
Calcium fluoride, Reactions (chemical)		
Dissolution of alumina in molten fluxes.	275-279B	
Kinetic studies on the dissolution of nitrogen in CaO-Al ₂ O ₃ , CaO-SiO ₂ , and CaO-CaF ₂ melts.	633-638B	
Calorimetry		
Enthalpies of formation of liquid (copper+manganese) alloys.	473-478B	
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases.	517-525A	
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper.	699-706A	
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy.	955-967A	
Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy.	1123-1131A	
Cans, Structural hardening		
Processing of AA3004 alloy can stock for optimum strength and formability.	2715-2721A	
Carbides, Alloying effects		
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy.	2143-2147A	
Carbides, Crystal growth		
Correlation of microstructure and fracture toughness in three high-speed steel rolls.	123-134A	
Computer simulation of multicomponent diffusion in joints of dissimilar steels.	303-308A	
Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels.	1607-1616A	
Carbon, Alloying additive		
The effect of carbon on the loss of room-temperature damping capacity in copper-manganese alloys.	105-112A	
Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si.	681-687A	
Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys.	2195-2199A	
Carbon, Alloying elements		
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts.	251-258B	
Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.	259-264B	
Carbon, Composite materials		
Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite.	1251-1259A	
Carbon, Diffusion		
Computer simulation of multicomponent diffusion in joints of dissimilar steels.	303-308A	
Carbon, Impurities		
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium.	455-463B	
Carbon, Reactions (chemical)		
Reduction of molybdenite with carbon in the presence of lime.	265-274B	
Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems.	553-562B	
Reaction mechanism on the smelting reduction of iron ore by solid carbon.	1019-1028B	
Mechanically activated carbothermic reduction of ilmenite.	1115-1121A	
Carbon, Solubility		
Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and CaO _{sat} -B ₂ O ₃ slags.	1257-1259B	
Carbon, Ternary systems		
C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C.	2453-2458A	
Carbon dioxide, Reactions (chemical)		
Rate control of the flash reduction of zinc calcines.	201-207B	
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination.	359-369B	
Influence of chromium and nickel on the dissociation of CO ₂ on carbon-saturated liquid iron.	639-645B	
Carbon fibers, Composite materials		
Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite.	1251-1259A	
Carbon monoxide, Diffusion		
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium.	455-463B	
Carbon monoxide, Reactions (chemical)		
Rate control of the flash reduction of zinc calcines.	201-207B	
Carbon steels, Welding		
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool.	509-516B	
Carbothermic reactions		
Kinetics of reduction of MnO in powder mixtures with carbon.	307-319B	
Mechanically activated carbothermic reduction of ilmenite.	1115-1121A	
Cassiterite, Reduction (chemical)		
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination.	359-369B	
Cast Iron, Casting		
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys.	115-123B	
Cast Iron, Melting		
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing.	135-148B	

- Casting alloys, Crystal growth**
The influence of convection during solidification on fragmentation of the mushy zone of a model alloy. 875-883A
- Casting alloys, Directional solidification**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- Casting defects**
Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
- Casting defects, Cooling effects**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- Castings, Crystal growth**
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Primary particle melting rates and equiaxed grain nucleation. 169-173B
Modeling of solidification of metal-matrix particulate composites with convection. 1165-1183B
Models for the isothermal coarsening of secondary dendrite arms in multicomponent alloys. 1185-1187B
- Castings, Directional solidification**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 . 867-874A
- Castings, Microstructure**
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
- Cavitation**
Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling. 2245-2254A
- Cements, Mechanical properties**
High-temperature tensile ductility in WC-Co cemented carbides. 1843-1847A
- Ceramic fibers, Composite materials**
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
Fabrication of Al_2O_3 -reinforced Ni_3Al composites by a novel in situ route. 1069-1077A
Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite. 1251-1259A
- Cerium, Alloying additive**
Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys. 2049-2057A
- Cerium, Alloying elements**
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
- Cerium, Ternary systems**
The Ce-Mg-Y system. 265-276A
- Cerium compounds, Reactions (chemical)**
Thermodynamics of mixed oxide compounds, $Li_2O-Ln_2O_3$ (Ln=Nd or Ce). 1103-1110B
Solutions of CeO_2 in cryolite melts. 1257B
- Cerium compounds, Synthesis**
Preparation of fine ceria powders by hydrolysis of cerium(IV) carboxylate solutions. 959-961B
- Cesium base alloys, Crystal lattices**
The Ce-Mg-Y system. 265-276A
- Cesium compounds, Reactions (chemical)**
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
- Chalcocopyrite, Reduction (chemical)**
The leaching kinetics of chalcocopyrite ($CuFeS_2$) in ammonium iodide solutions with iodine. 979-985B
- Chill casting**
Microstructure and properties of duplex $\delta-Al_3(Ti, V)/\beta-Ti, V$ alloys. 927-938A
Solidification of undercooled Fe-Cr-Ni alloys. III. Phase selection in chill casting. 2385-2395A
- Chill castings, Metallography**
Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
- Chip formation, Microstructural effects**
The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
- Chlorides, Environment**
The role of mass transport in the stress-corrosion cracking mechanism of Cu-25 at.% Au single crystals in chloride solutions. 2361-2369A
- Chlorides, Reactions (chemical)**
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
The leaching of nickeliferous laterite with ferric chloride. 995-1000B
- Chlorides, Reduction (chemical)**
Effect of Pd, Cu, and Ni additions on the kinetics of $NiCl_2$ reduction by hydrogen. 1241-1248B
- Chloridizing**
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
- Chlorination**
Kinetics of chlorination of niobium pentoxide by carbon tetrachloride. 39-45B
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
- Chromite refractories, Reactions (chemical)**
Minimization of hexavalent chromium in magnesite-chrome refractory. 855-859B
- Chromium, Alloying additive**
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels. 621-627A
Influence of chromium and nickel on the dissociation of CO_2 on carbon-saturated liquid iron. 639-645B
Discussion of "A study on morphology and plate mean dimensions in Fe-Ni and Fe-Ni-Cr alloys". 721-722A
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys. 1219-1222A
- Chromium, Alloying elements**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
Hydrogen embrittlement of Ni-Cr-Fe alloys. 655-663A
Solidification structure and abrasion resistance of high chromium white irons. 1315-1328A
- Chromium, Diffusion**
Minimizing beta flecks in the Ti-17 alloy. 899-903B
- Chromium, Mechanical properties**
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Chromium, Quinary systems**
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Chromium, Reactions (chemical)**
Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the $CrO-Cr_2O_3-SiO_2-CaO$ system. 235-242B
Thermodynamic properties of solid Pt-Mn, Pt-Cr, and Pt-Mn-Cr alloys at 1500°C. 547-552B
- Chromium, Recovering**
Activity-composition relations of MnO in $MnO-CrO_x-CaO-SiO_2$ -containing melts. 619-624B
- Chromium, Trace elements**
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Chromium compounds, Mechanical properties**
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Chromium iron, Mechanical properties**
Solidification structure and abrasion resistance of high chromium white irons. 1315-1328A
Correlation of microstructure and thermal fatigue property of three work rolls. 2595-2608A
- Chromium manganese steels, Mechanical properties**
The influence of martensite on the strength and impact behavior of steel. 2073-2084A

Chromium molybdenum steels, Coating	
Analysis and prevention of cracking phenomena occurring during softfacing of brass on AISI 4140 steel substrate.	2767-2773A
Chromium molybdenum steels, Mechanical properties	
Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel.	1195-1203A
Contact of crack surfaces during fatigue. II. Simulations.	2277-2289A
Chromium molybdenum steels, Microstructure	
Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels.	1607-1616A
Chromium molybdenum steels, Structural hardening	
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels.	621-627A
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A
Chromium molybdenum vanadium steels, Heat treatment	
X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation.	851-857A
Chromium molybdenum vanadium steels, Mechanical properties	
Bainitic chromium-tungsten steels with 3% chromium.	335-345A
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel.	629-635A
Chromium ores, Reduction (chemical)	
Influence of chromium and nickel on the dissociation of CO ₂ on carbon-saturated liquid iron.	639-645B
Chromium steels, Mechanical properties	
Tribological properties of aluminum alloy matrix TiB ₂ composite prepared by in situ processing.	491-502A
Chromium steels, Phase transformations	
A new model for the volume fraction of martensitic transformations.	2499-2506A
Chromium steels, Welding	
Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals.	1417-1428A
Chromium vanadium steels, Mechanical properties	
Bainitic chromium-tungsten steels with 3% chromium.	335-345A
Chromium vanadium steels, Phase transformations	
On the rule of additivity in phase transformation kinetics.	287-291A
Cleavage, Cooling effects	
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A
Cleavage, Microstructural effects	
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium.	389-399A
Crystallographic study of fatigue cracking in Ni ₃ Al(CrB) single crystal.	665-672A
Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium.	2297-2307A
Cleavage, Stress effects	
A mechanics-based approach to cyclic oxidation.	411-422A
Cobalt, Alloying additive	
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels.	621-627A
Cobalt, Alloying elements	
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys.	1011-1020A
Cobalt, Binary systems	
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution.	909-915A
Cobalt, Extraction	
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites.	795-804B
Cobalt, Quinary systems	
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries.	439-445B
Cobalt, Recovering	
Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur.	25-32B
Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag.	429-438B
Cobalt, Ternary systems	
The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K.	647-650B
Cobalt base alloys, Claddings	
Analysis of the laser-cladding process for stellite on steel.	501-508B
Cobalt base alloys, Magnetic properties	
Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Cobalt base alloys, Mechanical properties	
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C.	347-361A
Cobalt base alloys, Phases (state of matter)	
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution.	909-915A
Cobalt base alloys, Thermal properties	
Enthalpies of formation of liquid binary (copper-iron, cobalt, and nickel) alloys.	1119-1130B
Cobalt compounds	
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution.	909-915A
Cobalt compounds, Thermal properties	
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni ₃ Al.	2183-2188A
Cold rolling	
Texture development in dual-phase cold-rolled 18% Ni maraging steel.	2459-2465A
Processing of AA3004 alloy can stock for optimum strength and formability.	2715-2721A
Columnar structure	
Primary particle melting rates and equiaxed grain nucleation.	169-173B
Combustion	
Multiphase oxidation of metals.	209-214B
Comminution	
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.	895-904A
Compacting	
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides.	293-302A
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.	895-904A
Compressing	
Plastic deformation of hafnium under uniaxial compression.	1479-1487A
Compression tests	
Modelling the mechanical behavior of tantalum.	113-122A
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium.	389-399A
An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy.	885-893A
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.	895-904A
Compressive strength	
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy.	135-147A
Microstructure and mechanical behavior of the NiAl-TiC in situ composite.	1079-1087A
Compressive strength, Microstructural effects	
The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified L ₂ titanium trialuminide.	179-186A
Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy.	1205-1211A
Computation	
Mass transfer between solid and liquid in a gas-stirred vessel.	95-102B
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys.	115-123B
Kinetics of simultaneous two-phase precipitation in the Fe-C system.	161-168B
Calculation of solidification-related thermophysical properties for steels.	281-297B
Determination of the solidification curve of a Rene N4 superalloy.	503-504A
On the Gegel's stability criterion in processing maps.	2170-2173A
Computer programs	
Calculation of solidification-related thermophysical properties for steels.	281-297B
Computer simulation of multicomponent diffusion in joints of dissimilar steels.	303-308A
Computer simulation	
Simulation of recrystallization microstructures and textures: effects of preferential growth.	15-25A
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys.	115-123B
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing.	135-148B

- Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. I. Simulation. 149-156A
- Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
- Calculation of solidification-related thermophysical properties for steels. 281-297B
- Computer simulation of multicomponent diffusion in joints of dissimilar steels. 303-308A
- Evaluation of six $k-\epsilon$ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot. 479-489B
- Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys. 527-536A
- Object-oriented simulation of hydrometallurgical processes. I. Requirements and implementation. 777-784B
- Object-oriented simulation of hydrometallurgical processes. II. Application to the Bayer process. 785-793B
- Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites. 795-804B
- Thermodynamic modeling of selenide matte converting. 811-819B
- Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
- Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
- A numerical and experimental study of deformation characteristics of the plane strain punch stretching test. 1653-1659A
- Simulation of crack propagating in discontinuously reinforced metal matrix composite. 2149-2157A
- Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
- Modeling of rolling texture development in a ferritic chromium steel. 2343-2351A
- Simulation of the precipitation of sigma phase in duplex stainless steels. 2477-2484A
- Numerical simulation of the x-ray stress analysis technique in polycrystalline materials under elastic loading. 2515-2525A
- Concentration (composition)**
- Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag. 429-438B
- Concentration (composition), Alloying effects**
- Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys. 2195-2199A
- Concentration (composition), Diffusion effects**
- Diffusion fields associated with size and shape coarsening of oblate spheroids. 39-50A
- Consolidation**
- Effect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method. 223-228A
- Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Direct consolidation of γ -TiAl-Mn-Mo from elemental powder mixtures and control of porosity through a basic study of powder reactions. 2723-2729A
- Continuous casting**
- Dissolution of alumina in mold fluxes. 275-279B
- Calculation of solidification-related thermophysical properties for steels. 281-297B
- Evaluation of six $k-\epsilon$ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot. 479-489B
- A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- Convection**
- Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
- Modeling of solidification of metal-matrix particulate composites with convection. 1165-1183B
- Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
- Convection, Cooling effects**
- Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- The influence of convection during solidification on fragmentation of the mushy zone of a model alloy. 875-883A
- Convection, Shape effects**
- Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots. 943-952B
- Cooling curves**
- Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
- On the rule of additivity in phase transformation kinetics. 287-291A
- Determination of the solidification curve of a Rene N4 superalloy. 503-504A
- Cooling rate**
- An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
- Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
- Authors' reply to "The effect of the thermal path to reach isothermal temperature on transformation kinetics" by Dr. I.A. Wierszykowski. 1098A
- The effect of cooling rate from the melt on the recrystallization behavior of aluminum alloy 6013. 2137-2142A
- Building a continuous cooling transformation diagram of β -CEZ alloy by metallography and electrical resistivity measurements. 2467-2475A
- Copper, Alloying additive**
- Effect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method. 223-228A
- Evaluation of interaction coefficient in Al-Cu-H alloy. 625-632B
- The role of manganese and copper in the eutectoid transformation of spheroidal graphite cast iron. 2015-2025A
- Copper, Alloying elements**
- The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
- Copper, Binary systems**
- Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
- Enthalpies of formation of liquid (copper+manganese) alloys. 473-478B
- Copper, Bonding**
- A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Copper, Coating**
- Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Copper, Crystal growth**
- Grain boundary mobility during recrystallization of copper. 749-754A
- Copper, Diffusion**
- On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. 257-263A
- A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
- A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
- Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts. 969-977A
- Copper, Dopants**
- Effect of Pd, Cu, and Ni additions on the kinetics of $NiCl_2$ reduction by hydrogen. 1241-1248B
- Copper, Extraction**
- Thermodynamic modeling of selenide matte converting. 811-819B
- The leaching kinetics of chalcocopyrite ($CuFeS_2$) in ammonium iodide solutions with iodine. 979-985B
- Copper, Extrusion**
- Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Copper, Impurities**
- Copper removal from carbon-saturated molten iron with Al_2S_3 -FeS flux. 1029-1037B
- Copper, Irradiation**
- On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Copper, Mechanical properties**
- Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Influence of limit stress states and yield criteria on the prediction of forming limit strains in sheet metals. 2323-2333A

- Numerical simulation of the x-ray stress analysis technique in polycrystalline materials under elastic loading. 2515-2525A
- Copper, Microstructure**
A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Copper, Powder technology**
Consolidation of nanostructured metal powders by rapid forging; processing, modeling, and subsequent mechanical behavior. 895-904A
Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system. 1569-1580A
- Copper, Recovering**
Recovery of copper through decontamination of synthetic solutions using modified barks. 13-23B
Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur. 25-32B
Influence of ultrasound in ammoniacal leaching of a copper oxide ore. 721-723B
- Copper, Refining**
Interfacial phenomena in the liquid copper-calcium ferrite slag system. 401-407B
Preparation of ultra-high-purity copper by anion exchange. 987-993B
The kinetics of selenium removal from molten copper by powder injection. 1039-1051B
- Copper, Smelting**
Copper losses and thermodynamic considerations in copper smelting. 191-200B
Reduction kinetics of liquid iron oxide-containing slags by carbon monoxide. 821-826B
- Copper, Soldering**
Interfacial reactions in molten Sn/Cu and In/Cu couples. 927-934B
- Copper, Ternary systems**
A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
- Copper, Thermal properties**
Discontinuity in normal spectral emissivity of solid and liquid copper at the melting point. 2507-2513A
- Copper, Trace elements**
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Copper base alloys, Irradiation**
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Copper base alloys, Mechanical properties**
Fractal fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy. 2335-2341A
The role of mass transport in the stress-corrosion cracking mechanism of Cu-25 at.% Au single crystals in chloride solutions. 2361-2369A
- Copper base alloys, Microstructure**
Microstructure and mechanical properties of sputter-deposited $\text{Cu}_{1-x}\text{Ta}_x$ alloys. 917-925A
General existence of ledges on α_1 plates in Cu-Zn-Al alloys. 1617-1623A
- Copper base alloys, Phase transformations**
Enthalpies of formation of liquid (copper-manganese) alloys. 473-478B
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
Reduction and removal of martensite stabilization in Cu-Zn-Al-Mn-Zr shape memory alloys. 2765-2767A
- Copper base alloys, Physical properties**
The effect of carbon on the loss of room-temperature damping capacity in copper-manganese alloys. 105-112A
- Copper base alloys, Powder technology**
Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system. 1569-1580A
- Copper base alloys, Thermal properties**
Enthalpies of formation of liquid binary (copper-iron, cobalt, and nickel) alloys. 1119-1130B
- Copper compounds, Mechanical properties**
Fractal fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
- Copper compounds, Phases (state of matter)**
Crystal structure determination by high resolution electron microscopy for $(\text{Sr}_{0.98}\text{Nd}_{0.14})_2\text{Cu}_2\text{O}_5$ intergrown with infinite-layer compound. 1111-1114A
- Copper compounds, Powder technology**
Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Copper compounds, Reduction (chemical)**
Influence of ultrasound in ammoniacal leaching of a copper oxide ore. 721-723B
- Copper mattes, Reduction (chemical)**
Copper losses and thermodynamic considerations in copper smelting. 191-200B
- Copper mattes, Refining**
Interfacial phenomena in the liquid copper-calcium ferrite slag system. 401-407B
- Copper ores, Reduction (chemical)**
Influence of ultrasound in ammoniacal leaching of a copper oxide ore. 721-723B
- Copper plating**
Recovery of copper through decontamination of synthetic solutions using modified barks. 13-23B
- Correlation**
Solubility of platinum in molten fluxes as a measure of basicity. 103-108B
- Corrosion fatigue**
Corrosion fatigue crack growth behavior of a squeeze-cast Al-Si-Mg-Cu alloy with different precrack histories. 1471-1477A
- Corrosion fatigue, Composition effects**
A new nickel-aluminum bronze alloy with low magnetic permeability. 689-697A
- Corrosion mechanisms**
Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Corrosion rate**
Estimation of atmospheric corrosion of high-strength, low-alloy steels. 1274-1276A
- Corrosion resistance, Alloying effects**
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys. 1219-1222A
- Corrosion resistance, Composition effects**
A new nickel-aluminum bronze alloy with low magnetic permeability. 689-697A
- Corrosion resistance, Deformation effects**
Stress corrosion cracking of superplastically formed 7475 aluminum alloy. 2113-2121A
- Corrosion resistance, Heating effects**
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Corrosion resistance, Pressure effects**
Effects of applied pressure on the brazing of superplastic Inconel 718 superalloy. 1367-1376A
- Crack closure**
Contact of crack surfaces during fatigue. I. Formulation of the model. 2263-2275A
Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
- Crack closure, Microstructural effects**
Effects of morphology and volume fraction of α_2 phase on the fatigue crack propagation of a Ti-24Al-11Nb alloy. 2527-2536A
- Crack initiation**
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. I. Simulation. 149-156A
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
Simulation of crack propagating in discontinuously reinforced metal matrix composite. 2149-2157A
Contact of crack surfaces during fatigue. I. Formulation of the model. 2263-2275A
Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
- Crack initiation, Diffusion effects**
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel. 191-197A
- Crack initiation, High temperature effects**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Crack initiation, Microstructural effects**
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
Crystallographic study of fatigue cracking in $\text{Ni}_3\text{Al}(\text{CrB})$ single crystal. 665-672A
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity. 1157-1167A
- Crack initiation, pH effects**
Understanding the potential and pH dependency of high-strength β -titanium alloy environmental crack initiation. 2645-2656A

- Crack initiation, Temperature effects**
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling. 1815-1829A
- Crack opening displacement, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
- Crack propagation**
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. I. Simulation. 149-156A
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
Friction and abrasion resistance of cast aluminum alloy—fly ash composites. 245-250A
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel. The entering behavior of environmental gases into the plastic zone around fatigue crack tips in titanium. 629-635A
Corrosion fatigue crack growth behavior of a squeeze-cast Al-Si-Mg-Cu alloy with different precrack histories. 1341-1346A
Further study on the mechanism of the ductile-to-brittle fracture transition in C-Mn base and weld steel. 1471-1477A
Simulation of crack propagating in discontinuously reinforced metal matrix composite. 1689-1698A
Contact of crack surfaces during fatigue. I. Formulation of the model. 2149-2157A
Contact of crack surfaces during fatigue. II. Simulations. 2263-2275A, 2277-2289A
- Crack propagation, Composition effects**
Fatigue crack growth behavior in niobium-hydrogen alloys. 2059-2065A
- Crack propagation, Cooling effects**
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Crack propagation, Diffusion effects**
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel. 191-197A
- Crack propagation, Environmental effects**
The role of mass transport in the stress-corrosion cracking mechanism of Cu-25 at.% Au single crystals in chloride solutions. 2361-2369A
- Crack propagation, High temperature effects**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Crack propagation, Low temperature effects**
Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
- Crack propagation, Microstructural effects**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
Controlled drawing to produce desirable hardness and microstructural gradients in alloy 302 wire. 363-375A
Crystallographic study of fatigue cracking in Ni₃Al(CrB) single crystal. 665-672A
Mechanisms of ambient temperature fatigue crack growth in Ti-48.5Al-3Nb-2Cr-0.2V. 825-835A
Effects of morphology and volume fraction of α_2 phase on the fatigue crack propagation of a Ti-24Al-11Nb alloy. 2527-2536A
- Crack propagation, Stress effects**
A mechanics-based approach to cyclic oxidation. 411-422A
High-temperature crack growth in 304 stainless steel under mixed-mode loading conditions. 763-773A
- Crack propagation, Temperature effects**
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling. 1815-1829A
- Crack propagation, Welding effects**
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Cracking (fracturing), Coating effects**
Analysis and prevention of cracking phenomena occurring during softfacing of brass on AISI 4140 steel substrate. 2767-2773A
- Cracking (fracturing), High temperature effects**
High-temperature tensile ductility in WC-Co cemented carbides. 1843-1847A
- Cracking (fracturing), Microstructural effects**
Fatigue crack growth through alloyed niobium, Nb-Cr₂Nb, and Nb-Nb₅Si₃ in situ composites. 1297-1314A
Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
- Creep (materials)**
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel. 629-635A
An examination of creep data for an Al-Mg composite. 1271-1273A
- Creep (materials), High temperature effects**
Dislocation/particle interactions in β' (NiAl) precipitation strengthened ferritic Fe-19Cr-4Ni-2Al alloy. 1098-1101A
High strain rate torsional behavior of an ultrahigh carbon steel (1.8% C-1.6% Al) at elevated temperature. 1913-1920A
- Creep (materials), Microstructural effects**
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy. 1945-1949A
The role of coincidence-site-lattice boundaries in creep of Ni-16Cr-9Fe at 360°C. 2101-2112A
- Creep (materials), Temperature effects**
Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition. 1347-1355A
- Creep rate, Composition effects**
On the creep strengthening of SiC particulates in SiC-Al composites. 2780-2782A
- Creep rate, Microstructural effects**
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
- Creep rate, Temperature effects**
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Creep rupture strength**
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Creep rupture strength, Impurity effects**
Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy. 649-654A
- Creep rupture strength, Microstructural effects**
Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
- Creep strength, Alloying effects**
Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel. 1195-1203A
- Creep strength, Composition effects**
On the creep strengthening of SiC particulates in SiC-Al composites. 2780-2782A
- Creep strength, Microstructural effects**
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
- Creep tests**
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- Critical temperature, Deformation effects**
Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. 2309-2321A
- Crucibles, Materials selection**
Thermodynamics of iron oxide in Fe₂O₃-dilute CaO-Al₂O₃-Fe₂O₃ fluxes at 1873K. 243-250B
- Crushing**
Metal extraction from ores by heap leaching. 529-545B
- Cryogenic properties**
Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
- Cryogenics**
Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
- Cryolite, Reactions (chemical)**
Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data. 81-86B
Activities in the system cryolite-alumina. 1089-1093B
Thermodynamics of the system NaF-AlF₃. VII. Non-stoichiometric solid cryolite. 1095-1097B
The solubility of ZnO and ZnAl₂O₄ in cryolite melts. 1099-1101B
Solutions of CeO₂ in cryolite melts. 1257B
- Crystal structure**
Interfaces in MoSi₂-SiC in situ composites synthesized by melt processing. 1901-1911A
R values of fiber-textured tantalum plates. 2085-2088A

- The role of coincidence-site-lattice boundaries in creep of Ni-16Cr-9Fe at 360°C. 2101-2112A
- Crystal structure, Deformation effects**
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Amorphization reaction of Ni-Ta powders during mechanical alloying. 1429-1435A
- Crystal structure, Heating effects**
- Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. 545-561A
- Microstructure and mechanical properties of sputter-deposited $\text{Cu}_{1-x}\text{Te}_x$ alloys. 917-925A
- Crystallization, Cooling effects**
- Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
- Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
- Crystallization, Deformation effects**
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Crystallization, Heating effects**
- The Ce-Mg-Y system. 265-276A
- Crystallography**
- Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- Cubic lattice**
- Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys. 527-536A
- Current density**
- Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Current density, Cooling effects**
- Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Current efficiency**
- Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments. 59-68B
- Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds. 69-79B
- Curvature**
- Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
- Cutting tool materials, Mechanical properties**
- High-temperature tensile ductility in WC-Co cemented carbides. 1843-1847A
- Cutting tools, Mechanical properties**
- High-temperature tensile ductility in WC-Co cemented carbides. 1843-1847A
- Cutting tools, Service life**
- The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
- Cyclic loads**
- A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
- Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K. 595-609A
- Cyclic deformation behavior of a transformation-induced plasticity-aided dual-phase steel. 2637-2644A
- Damage**
- High-temperature crack growth in 304 stainless steel under mixed-mode loading conditions. 763-773A
- Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling. 2245-2254A
- Damage effect on the fracture toughness of nodular cast iron. II. Damage zone characterization ahead of a crack tip. 2255-2262A
- Damage, Diffusion effects**
- Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel. 191-197A
- Damage, Microstructural effects**
- Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
- Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy. 1945-1949A
- Damping capacity, Alloying effects**
- The effect of carbon on the loss of room-temperature damping capacity in copper-manganese alloys. 105-112A
- Debonding**
- Friction and abrasion resistance of cast aluminum alloy—fly ash composites. 245-250A
- Debonding, Heating effects**
- Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys. 485-489A
- Decomposition**
- Determination of kinetic parameters using differential thermal analysis—application to the decomposition of CaCO_3 . 1157-1164B
- Deep drawing**
- Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- Deformation**
- The entering behavior of environmental gases into the plastic zone around fatigue crack tips in titanium. 1341-1346A
- Latent hardening behavior of monocrystalline Al-Mg solid solution. 2353-2360A
- Deformation, High temperature effects**
- High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Deformation, Impurity effects**
- Effect of impurity hydrogen on the deformation and fracture in an Al-5 mass% Mg alloy. 2291-2295A
- Deformation mechanisms**
- Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K. 595-609A
- An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
- Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A
- Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Dislocation/particle interactions in β (NiAl) precipitation strengthened ferritic Fe-19Cr-4Ni-2Al alloy. 1098-1101A
- Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy. 1205-1211A
- The role of coincidence-site-lattice boundaries in creep of Ni-16Cr-9Fe at 360°C. 2101-2112A
- A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Deformation mechanisms, Low temperature effects**
- Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
- Deformation resistance, Composition effects**
- The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Delaminating**
- Friction and abrasion resistance of cast aluminum alloy—fly ash composites. 245-250A
- Dendritic structure**
- Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
- Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
- Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
- Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
- Models for the isothermal coarsening of secondary dendrite arms in multicomponent alloys. 1185-1187B
- Motion and remelting of dendrite fragments during directional solidification of a nickel-base superalloy. 1533-1542A
- In situ studies of precipitate formation in Al-Pb monotelect solidification by x-ray transmission microscopy. 1705-1710A
- Dendritic structure, Composition effects**
- Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Dendritic structure, Cooling effects**
- Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 . 867-874A
- The influence of convection during solidification on fragmentation of the mushy zone of a model alloy. 875-883A

Dendritic structure, Pressure effects

Solidification of hypereutectic Al-38 wt.% Cu alloy in microgravity and in unit gravity.

1245-1250A

DensificationEffect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method.

223-228A

Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.

895-904A

Supersolidus liquid-phase sintering of prealloyed powders.

1553-1567A

Density

Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite.

1261-1269A

Density, Alloying effectsEffect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method.

223-228A

Density, Heating effects

A study on the improvement of the sintered density of W-Ni-Mn heavy alloy.

835-839b

Density, Microstructural effects

Calculation of solidification-related thermophysical properties for steels.

281-297B

Density, Pressure effects

Effects of squeeze casting on the properties of Zn-Bi monotectic alloy.

1509-1515A

Deoxidizing

Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.

259-264B

Deoxidation equilibria of calcium and magnesium in liquid iron.

1131-1139B

Desilicizing

Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal.

47-57B

Desulfurizing

Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal.

47-57B

Detection

Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.

423-434A

Diamond pyramid hardness

Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions.

809-815A

Diamond pyramid hardness, Composition effects

Correlation of microstructure and fracture toughness in three high-speed steel rolls.

123-134A

Diamond pyramid hardness, Pressure effects

Effects of squeeze casting on the properties of Zn-Bi monotectic alloy.

1509-1515A

Differential equations

Effect of elastic stress on two-phase binary diffusion couples.

27-38A

Diffusion fields associated with size and shape coarsening of oblate spheroids.

39-50A

Kinetics of simultaneous two-phase precipitation in the Fe-C system.

161-168B

Differential thermal analysisDetermination of kinetic parameters using differential thermal analysis—application to the decomposition of $CaCO_3$.

1157-1164B

Diffraction

Recovery of copper through decontamination of synthetic solutions using modified barks.

13-23B

Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy.

63-77A

Effect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method.

223-228A

A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite.

237-243A

The Ce-Mg-Y system.

265-276A

Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides.

293-302A

Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments.

461-469A

Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases.

517-525A

Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys.

527-536A

Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite.

545-561A

Microstructural features of cracking in autogenous beryllium weldments.

673-680A

Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper.

699-706A

Directionally solidified eutectics, Mechanical properties

Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga.

729-742A

X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation.

851-857A

Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.

895-904A

Microstructure and properties of duplex $\delta-Al_3(Ti, V)/\beta-Ti, V$ alloys.

927-938A

Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy.

955-967A

The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys.

1011-1020A

Microstructure and mechanical behavior of the NiAl-TiC in situ composite.

1079-1087A

Crystal structure determination by high resolution electron microscopy for $(Sr_{0.88}Nd_{0.12})_3Cu_2O_5$ intergrown with infinite-layer compound.

1111-1114A

Mechanically activated carbothermic reduction of ilmenite. Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy.

1115-1121A

X-ray study of phase transformations in martensitic Ni-Al alloys.

1123-1131A

Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting.

1133-1142A

Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting.

1223-1231A

Diffusion welding

Phase reaction and diffusion path of the SiC/Ti system.

1385-1390A

Diffusivity

Dissolution of alumina in mold fluxes.

275-279B

A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy.

563-582A

A modified "hole" theory for solute impurity diffusion in liquid metals.

583-593A

Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper.

699-706A

Diffusivity, Coating effects

Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts.

969-977A

Diffusivity, Composition effects

Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel.

191-197A

Diffusivity, Deformation effectsOn the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy.

257-263A

Diffusivity, Field effects

Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution.

843-850A

Diffusivity, Heating effects

Minimizing beta flecks in the Ti-17 alloy.

899-903B

Diffusivity, High temperature effectsPerformance of molybdenum with UF_4 at high temperatures as a wall material for space reactors.

2123-2128A

Diffusivity, Pressure effects

Reaction diffusion and phase equilibria in the V-N system.

837-842A

Diffusivity, Stress effects

Effect of elastic stress on two-phase binary diffusion couples.

27-38A

Diffusivity, Temperature effects

Computer simulation of multicomponent diffusion in joints of dissimilar steels.

303-308A

Phase reaction and diffusion path of the SiC/Ti system.

1385-1390A

Dimensional measurements

The shape of bubbles rising near the nozzle exit in molten metal baths.

417-423B

Direct chill casting

Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys.

207-213A

Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot.

479-489B

Characterization of the flow in the molten metal sump during direct chill aluminum casting.

491-499B

Directionally solidified eutectics, Crystal lattices

Analysis of orientation clustering in a directionally solidified nickel-based ingot.

229-236A

Directionally solidified eutectics, Mechanical propertiesRoom-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy.

135-147A

A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy.

401-409A

Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys.

795-807A

Directionally solidified eutectics, Metallography Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys.	207-213A	Dissolution, Alloying effects Evaluation of interaction coefficient in Al-Cu-H alloy.	625-632B
Directionally solidified eutectics, Microstructure Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. Motion and remelting of dendrite fragments during directional solidification of a nickel-base superalloy. The occurrence and periodicity of oscillating peritectic microstructures developed during directional solidification.	651-663B 1533-1542A 1543-1552A	Dissolution, Pressure effects Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and CaO-satd-B ₂ O ₃ slags.	1257-1259B
Directionally solidified eutectics, Quality control Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification.	1517-1531A	Drawability Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals.	785-793A
Dislocation density Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys.	795-807A	Ductile brittle transition Further study on the mechanism of the ductile-to-brittle fracture transition in C-Mn base and weld steel.	1689-1698A
Dislocation density, Alloying effects The antiphase boundary energies of L ₁₂ ordered Ni _{74.5} Pd ₂ Al _{23.5} alloy.	1092-1095A	Ductile brittle transition, Alloying effects Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys.	775-784A 2049-2057A
Dislocation density, Stress effects Dislocations in continuous filament reinforced W/NiAl and Al ₂ O ₃ /NiAl composites.	2755-2761A	Ductile brittle transition, Composition effects Bainitic chromium-tungsten steels with 3% chromium.	335-345A
Dislocation mobility Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys. Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide.	795-807A 979-989A	Ductile brittle transition, Deformation effects Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy.	2309-2321A
Dislocation pinning A study on the subgrain superplasticity of extruded Al-Al ₃ Ni eutectic alloy.	401-409A	Ductile brittle transition, High temperature effects High-temperature tensile ductility in WC-Co cemented carbides.	1843-1847A
Dislocation pinning, Deformation effects A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C.	347-361A	Ductile brittle transition, Microstructural effects Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy.	79-90A
Dislocations, Alloying effects The antiphase boundary energies of L ₁₂ ordered Ni _{74.5} Pd ₂ Al _{23.5} alloy.	1092-1095A	Ductile fracture, Alloying effects Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A
Dislocations, Deformation effects Plastic deformation of hafnium under uniaxial compression.	1479-1487A	Ductile fracture, Composition effects Hydrogen embrittlement of Ni-Cr-Fe alloys.	655-663A
Dislocations, Diffusion effects X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation.	851-857A	Ductile fracture, Heating effects Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A
Dispersion hardening, Alloying effects Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A	Ductile fracture, Microstructural effects Fractal fracture and transformation toughening in CuNiAl single crystal.	1337-1340A
Dispersion hardening alloys, Phases (state of matter) Microstructure of second-phase particles in Ti-5Al-4Sn-2Zr-1Mo-0.25Si-1Nd alloy.	1595-1605A	Ductility Fabrication of Al ₂ O ₃ -reinforced Ni ₃ Al composites by a novel in situ route. Processing of AA3004 alloy can stock for optimum strength and formability.	1069-1077A 2715-2721A
Dispersion hardening alloys, Structural hardening Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy.	775-784A 1205-1211A	Ductility, Alloying effects Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys. Retained austenite characteristics in thermomechanically processed Si-Mn transformation-induced plasticity steels.	2049-2057A 2405-2414A
Dispersions Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy.	1205-1211A	Ductility, Composition effects A new nickel-aluminum bronze alloy with low magnetic permeability.	689-697A
Dissimilar materials, Joining Computer simulation of multicomponent diffusion in joints of dissimilar steels.	303-308A	Ductility, Deformation effects Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy.	2309-2321A
Dissimilar materials, Welding Particle fracture, retention, and fluid flow in metal matrix composite friction joints.	2371-2384A	Ductility, Heating effects Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. Tensile properties of a thermomechanically processed ductile iron. Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy.	377-387A 1213-1218A 1809-1814A
Dissimilar metals, Welding Particle fracture, retention, and fluid flow in metal matrix composite friction joints.	2371-2384A	Ductility, High temperature effects An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. High-temperature tensile ductility in WC-Co cemented carbides. High strain rate torsional behavior of an ultrahigh carbon steel (1.8% C-1.6% Al) at elevated temperature.	885-893A 1843-1847A 1913-1920A
Dissociation, Alloying effects Influence of chromium and nickel on the dissociation of CO ₂ on carbon-saturated liquid iron.	639-645B	Ductility, Impurity effects Effect of impurity hydrogen on the deformation and fracture in an Al-5 mass% Mg alloy.	2291-2295A
Dissolution The electrochemical behavior of gold in ammoniacal solutions at 75°C. Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data. Solubility of platinum in molten fluxes as a measure of basicity. Dissolution of alumina in mold fluxes. Kinetic studies on the dissolution of nitrogen in CaO-Al ₂ O ₃ , CaO-SiO ₂ , and CaO-CaF ₂ melts. Dissolution of hard-alpha inclusions in liquid titanium alloys. The solubility of ZnO and ZnAl ₂ O ₄ in cryolite melts.	5-12B 81-86B 103-108B 275-279B 633-638B 1001-1010B 1099-1101B	Ductility, Microstructural effects Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified L ₁₂ titanium trialuminide. Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite.	79-90A 179-186A 309-323A

- A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
- Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys. 795-807A
- Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Duplex stainless steels**
- Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite. 1251-1259A
- Duplex stainless steels, Phase transformations**
- Simulation of the precipitation of sigma phase in duplex stainless steels. 2477-2484A
- Duplex stainless steels, Welding**
- An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
- Dynamics**
- Dynamics of solid/liquid interface shape evolution near an insoluble particle—an x-ray transmission microscopy investigation. 2129-2135A
- Earing, Stress effects**
- Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- Economics**
- Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag. 429-438B
- Edge dislocations, Deformation effects**
- Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K. 595-609A
- Efficiency**
- Intelligent control of the feeding of aluminum electrolytic cells using neural networks. 215-221B
- Elastic anisotropy, Alloying effects**
- Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy. 1399-1415A
- Elastic anisotropy, Microstructural effects**
- R values of fiber-textured tantalum plates. 2085-2088A
- Elastic constants**
- Neutron diffraction measurements of intergranular strains in Monel-400. 2565-2576A
- Elastic deformation**
- Experimental evaluation of a polycrystal deformation modeling scheme using neutron diffraction measurements. 2537-2541A
- Elastic deformation, Temperature effects**
- A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- Electrical measurements**
- Development of a multineedle electroresistivity probe for measuring bubble characteristics in molten metal baths. 409-416B
- The shape of bubbles rising near the nozzle exit in molten metal baths. 417-423B
- A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides. 1141-1149B
- Electrical steels, Crystal growth**
- Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si. 681-687A
- Electroless nickel plating**
- Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts. 969-977A
- Electrolytic cells**
- Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data. 81-86B
- Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂". 723-725B
- Electrolytic cells, Automation**
- Intelligent control of the feeding of aluminum electrolytic cells using neural networks. 215-221B
- Electrolytic cells, Development**
- Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments. 59-68B
- Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds. 69-79B
- Electrometallurgy**
- Thermodynamics of mixed oxide compounds, Li₂O-Ln₂O₃ (Ln=Nd or Ce). 1103-1110B
- Electron beam melting**
- Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- Analysis of multicomponent evaporation in electron beam melting and refining of titanium alloys. 1227-1239B
- Electron beam welding**
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Electron beams**
- Microstructural modification of plain carbon steels irradiated by high-energy electron beam. 637-647A
- Surface hardening of a ductile-cast iron roll using high-energy electron beams. 1499-1508A
- Electron diffraction**
- Electron backscattered diffraction investigation of the texture of leathery crystals in aluminum alloys. 207-213A
- Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
- Crystal structure determination by high resolution electron microscopy for (Sr_{0.88}Nd_{0.14})₃Cu₂O₅ intergrown with infinite-layer compound. 1111-1114A
- Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Electron microscopy**
- Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
- Crystal structure determination by high resolution electron microscopy for (Sr_{0.88}Nd_{0.14})₃Cu₂O₅ intergrown with infinite-layer compound. 1111-1114A
- Electron probe analysis**
- Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts. 969-977A
- The entering behavior of environmental gases into the plastic zone around fatigue crack tips in titanium. 1341-1346A
- Electroplates, Crystal growth**
- Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Electroplating**
- Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Electrowinning**
- Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments. 59-68B
- Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds. 69-79B
- Elongation**
- Room-temperature superplasticity in a Zn-0.3 wt.% Al alloy. 1711-1713A
- Elongation, Composition effects**
- Bainitic chromium-tungsten steels with 3% chromium. 335-345A
- Hydrogen embrittlement of Ni-Cr-Fe alloys. 655-663A
- Elongation, Heating effects**
- Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
- Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Tensile properties of a thermomechanically processed ductile iron. 1213-1218A
- Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy. 1809-1814A
- Development of reproducible and increased strength properties in thick extrusions of low-alloy Al-Zn-Mg-Cu based AA 7075. 2429-2433A
- Elongation, High temperature effects**
- High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Elongation, Microstructural effects**
- Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
- A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
- Superplastic behavior of spray-deposited 5083 Al. 1059-1068A
- Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy. 1205-1211A

- Embrittlement, Alloying effects**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Embrittlement, Composition effects**
Fatigue crack growth behavior in niobium-hydrogen alloys. 2059-2065A
- Emulsification**
Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
- Energy consumption**
Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments. 59-68B
Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds. 69-79B
- Engine components, Casting**
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
- Engine components, Mechanical properties**
Study of inclusions in a failed aero-engine component. 1281-1288A
An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply [75]₄ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
- Enthalpy**
A model for calculating interaction coefficients between elements in liquid and iron-base alloy. 109-113B
Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me-Cu, Ag, and Au). 187-190A
A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
Enthalpies of formation of liquid (copper-manganese) alloys. 473-478B
Studies on the thermodynamic stability of silver selenide. 519-522B
Enthalpies of formation of liquid binary (copper-iron, cobalt, and nickel) alloys. 1119-1130B
Determination of kinetic parameters using differential thermal analysis—application to the decomposition of CaCO₃. 1157-1164B
- Enthalpy, Microstructural effects**
Calculation of solidification-related thermophysical properties for steels. 281-297B
- Entropy**
A model for calculating interaction coefficients between elements in liquid and iron-base alloy. 109-113B
Studies on the thermodynamic stability of silver selenide. 519-522B
The evolution of solutions: a thermodynamic analysis of mechanical alloying. 2189-2194A
- Equations**
Determination of the solidification curve of a Rene N4 superalloy. 503-504A
- Equiaxed structure**
Primary particle melting rates and equiaxed grain nucleation. 169-173B
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
Superplastic behavior of spray-deposited 5083 Al. 1059-1068A
- Equiaxed structure, Deformation effects**
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Equilibrium**
A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
- Eutectic decomposition, Cooling effects**
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al₂O₃. 867-874A
- Eutectic reactions**
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
Eutectic reaction and nonconstant material parameters in micro-macro segregation modeling. 2705-2714A
- Eutectoid composition**
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel. 191-197A
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel. 191-197A
- Eutectoid decomposition**
Plate-shaped transformation products in zirconium-base alloys. 2201-2216A
- Eutectoid reactions, Alloying effects**
The role of manganese and copper in the eutectoid transformation of spheroidal graphite cast iron. 2015-2025A
- Eutectoid reactions, Heating effects**
Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Extractive metallurgy**
Solubility of platinum in molten fluxes as a measure of basicity. 103-108B
- Extrusion billets, Microstructure**
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Extrusions, Mechanical properties**
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
Development of reproducible and increased strength properties in thick extrusions of low-alloy Al-Zn-Mg-Cu based AA 7075. 2429-2433A
- Failure analysis**
Study of inclusions in a failed aero-engine component. 1281-1288A
- Fatigue (materials)**
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A
- Fatigue (materials), High temperature effects**
Dislocation/particle interactions in β' (NiAl) precipitation strengthened ferritic Fe-19Cr-4Ni-2Al alloy. 1098-1101A
- Fatigue (materials), Low temperature effects**
Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
- Fatigue failure**
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. I. Simulation. 149-156A
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
Study of inclusions in a failed aero-engine component. 1281-1288A
The entering behavior of environmental gases into the plastic zone around fatigue crack tips in titanium. 1341-1346A
Corrosion fatigue crack growth behavior of a squeeze-cast Al-Si-Mg-Cu alloy with different precrack histories. 1471-1477A
Contact of crack surfaces during fatigue. I. Formulation of the model. 2263-2275A
Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
- Fatigue failure, Composition effects**
Interfacial bonding in spray-formed metal matrix composites. 1095-1098A
Fatigue crack growth behavior in niobium-hydrogen alloys. 2059-2065A
- Fatigue failure, Cooling effects**
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Fatigue failure, Microstructural effects**
Crystallographic study of fatigue cracking in Ni₃Al(CrB) single crystal. 665-672A
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
Fatigue crack growth through alloyed niobium, Nb-Cr₂Nb, and Nb-Nb₅Si₃ in situ composites. 1297-1314A
Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
Effects of morphology and volume fraction of α_2 phase on the fatigue crack propagation of a Ti-24Al-11Nb alloy. 2527-2536A
- Fatigue life**
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
- Fatigue life, Microstructural effects**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity. 1157-1167A
Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
- Fatigue strength, Coating effects**
Role of cladding in the notched tensile properties of a titanium matrix composite. 2731-2740A
- Fatigue strength, Composition effects**
A new nickel-aluminum bronze alloy with low magnetic permeability. 689-697A
Fatigue and fracture of damage-tolerant in situ titanium matrix composites. 2037-2047A
- Fatigue strength, Microstructural effects**
Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply [75]₄ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
Correlation of microstructure and thermal fatigue property of three work rolls. 2595-2608A
- Fatigue tests**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A

- High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
- Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
- Fatigue wear**
Wear characteristics of TiNi shape memory alloys. 1871-1877A
- FCC metals, Metal working**
Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A
- FCC metals, Microstructure**
Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys. 2195-2199A
- FCC metals, Structural hardening**
Strain hardening regimes and microstructural evolution during large strain compression of low stacking fault energy fcc alloys that form deformation twins. 1781-1795A
- Feeding**
Characterization of the flow in the molten metal sump during direct chill aluminum casting. 491-499B
- Ferrite**
The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- Ferrite, Crystal growth**
Competitive formation of inter- and intragranularly nucleated ferrite. 2005-2013A
- Ferrite, Heating effects**
Microstructural evolution during thermomechanical processing of a Ti-Nb interstitial-free steel just below the A_r3 temperature. 1437-1443A
- Ferrite (ore), Reactions (chemical)**
Interfacial phenomena in the liquid copper-calcium ferrite slag system. 401-407B
- Ferrites, Reduction (chemical)**
Steady-state modeling of zinc-ferrite hot-acid leaching. 701-711B
- Ferrites, Synthesis**
Kinetics of zinc ferrite formation in the rate deceleration period. 671-677B
- Ferritic stainless steels, Mechanical properties**
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
- Ferritic stainless steels, Microstructure**
Modeling of rolling texture development in a ferritic chromium steel. 2343-2351A
- Ferritic stainless steels, Thermal properties**
Calculation of solidification-related thermophysical properties for steels. 281-297B
- Ferritic stainless steels, Welding**
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 687-700B
- Ferromanganese, Reactions (chemical)**
Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems. 553-562B
- Ferromanganese, Synthesis**
Kinetics of reduction of MnO in powder mixtures with carbon. 307-319B
- Ferrosilicon, Reactions (chemical)**
Thermodynamics of phosphorus in molten Si-Fe and Si-Mn alloys. 1151-1155B
- Ferrous alloys, Casting**
Primary particle melting rates and equiaxed grain nucleation. 169-173B
- Ferrous alloys, Corrosion**
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys. 1219-1222A
- Ferrous alloys, Crystal growth**
Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Solidification of undercooled Fe-Cr-Ni alloys. III. Phase selection in chill casting. 2385-2395A
- Ferrous alloys, Electrochemistry**
Kinetic studies of the reduction of FeO and FeWO₄ by hydrogen. 613-618B
- Ferrous alloys, Mechanical properties**
Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy. 649-654A
- Dislocation/particle interactions in β' (NiAl) precipitation strengthened ferritic Fe-19Cr-4Ni-2Al alloy. 1098-1101A
- Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition. 1347-1355A
- Ferrous alloys, Microstructure**
Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys. 527-536A
- Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. 545-561A
- Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
- Discussion of "A study on morphology and plate mean dimensions in Fe-Ni and Fe-Ni-Cr alloys". 721-722A
- Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys. 2195-2199A
- Ferrous alloys, Phase transformations**
The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- Ferrous alloys, Powder technology**
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Ferrous alloys, Reactions (chemical)**
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
- Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
- On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
- Ferrous alloys, Structural hardening**
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
- Ferrous alloys, Surface properties**
Surface tension and wettability studies of liquid Fe-Ni-O alloys. 465-472B
- Ferrous alloys, Thermal properties**
A model for calculating interaction coefficients between elements in liquid and iron-base alloy. 109-113B
- Enthalpies of formation of liquid binary (copper-iron, cobalt, and nickel) alloys. 1119-1130B
- Fiber composites, Casting**
Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route. 1069-1077A
- Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite. 1251-1259A
- Fiber composites, Mechanical properties**
A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
- Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
- Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
- Strengthening effects in AC8A/Al₂O₃ short-fiber composites as a function of temperature and strain rate. 1859-1869A
- An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply [75]₄ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
- Role of cladding in the notched tensile properties of a titanium matrix composite. 2731-2740A
- Fiber composites, Microstructure**
Dislocations in continuous filament reinforced W/NiAl and Al₂O₃/NiAl composites. 2755-2761A
- Fiber composites, Powder technology**
Solidification paths and carbide morphologies in melt-processed MoSi₂-SiC in situ composites. 1889-1900A
- Finite difference theory**
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
- Finite element method**
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
- Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
- A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- A numerical and experimental study of deformation characteristics of the plane strain punch stretching test. 1653-1659A
- Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling. 2245-2254A

Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium.	2297-2307A		
Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite.	2741-2753A		
Flammability			
Multiphase oxidation of metals.	209-214B		
Flash smelting			
Copper losses and thermodynamic considerations in copper smelting.	191-200B		
Rate control of the flash reduction of zinc calcines.	201-207B		
Fluid dynamics			
Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling.	87-94B		
Evaluation of six $k-\epsilon$ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements.	321-332B		
Modeling the discontinuous liquid flow in a blast furnace.	333-343B		
Characterization of the flow in the molten metal sump during direct chill aluminum casting.	491-499B		
Nonwetting flow of a liquid through a packed bed with gas cross-flow.	597-604B		
Establishment time of liquid flow in a bath agitated by bottom gas injection.	605-612B		
Bubble and liquid flow characteristics in a Wood's metal bath stirred by bottom helium gas injection.	1053-1061B		
Fluid flow			
Establishment time of liquid flow in a bath agitated by bottom gas injection.	605-612B		
Fluid friction, Cooling effects			
Convection and channel formation in solidifying Pb-Sn alloys.	859-866A		
Fluidized bed electrodes			
Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments.	59-68B		
Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds.	69-79B		
Fluidized bed electrolysis			
Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds.	69-79B		
Fluidized bed reduction			
Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments.	59-68B		
Fluidized beds			
Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments.	59-68B		
Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds.	69-79B		
Wall-to-bed heat transfer in a circulating fluidized bed for the reduction of iron ore particles.	713-720B		
Fluorides, Environment			
Performance of molybdenum with UF_4 at high temperatures as a wall material for space reactors.	2123-2128A		
Fluorine, Diffusion			
Performance of molybdenum with UF_4 at high temperatures as a wall material for space reactors.	2123-2128A		
Fluxes, Reactions (chemical)			
Thermodynamics of iron oxide in Fe_2O_3 -dilute $CaO+Al_2O_3+Fe_2O_3$ fluxes at 1873K.	243-250B		
Kinetic studies on the dissolution of nitrogen in $CaO-Al_2O_3$, $CaO-SiO_2$, and $CaO-CaF_2$ melts.	633-638B		
Fluxes, Solubility			
Solubility of platinum in molten fluxes as a measure of basicity.	103-108B		
Fly ash, Composite materials			
Friction and abrasion resistance of cast aluminum alloy-fly ash composites.	245-250A		
Foil, Bonding			
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding.	2663-2671A		
Foil, Coating			
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper.	699-706A		
Foil, Diffusion			
Performance of molybdenum with UF_4 at high temperatures as a wall material for space reactors.	2123-2128A		
Forging			
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.	895-904A		
Tensile properties of a thermomechanically processed ductile iron.	1213-1218A		
Formability			
A numerical and experimental study of deformation characteristics of the plane strain punch stretching test.	1653-1659A		
Influence of limit stress states and yield criteria on the prediction of forming limit strains in sheet metals.	2323-2333A		
Processing of AA3004 alloy can stock for optimum strength and formability.	2715-2721A		
Formability, Alloying effects			
Retained austenite characteristics in thermomechanically processed Si-Mn transformation-induced plasticity steels.	2405-2414A		
Forward extrusion			
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion.	1047-1057A		
Foundry practice			
Primary particle melting rates and equiaxed grain nucleation.	169-173B		
Fractography			
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C.	347-361A		
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A		
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium.	389-399A		
Hydrogen embrittlement of Ni-Cr-Fe alloys.	655-663A		
Crystallographic study of fatigue cracking in $Ni_3Al(CrB)$ single crystal.	665-672A		
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W.	825-835A		
Interfacial bonding in spray-formed metal matrix composites.	1095-1098A		
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity.	1157-1167A		
The entering behavior of environmental gases into the plastic zone around fatigue crack tips in titanium.	1341-1346A		
Fracture mechanics			
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. I. Simulation.	149-156A		
Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy.	157-169A		
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel.	191-197A		
High-temperature crack growth in 304 stainless steel under mixed-mode loading conditions.	763-773A		
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity.	1157-1167A		
Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents.	1667-1687A		
Further study on the mechanism of the ductile-to-brittle fracture transition in C-Mn base and weld steel.	1689-1698A		
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling.	1815-1829A		
Simulation of crack propagating in discontinuously reinforced metal matrix composite.	2149-2157A		
Contact of crack surfaces during fatigue. I. Formulation of the model.	2263-2275A		
Contact of crack surfaces during fatigue. II. Simulations.	2277-2289A		
Fracture strength, Alloying effects			
Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys.	2049-2057A		
Fracture strength, Composition effects			
Fatigue and fracture of damage-tolerant in situ titanium matrix composites.	2037-2047A		
Fracture strength, Microstructural effects			
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium.	389-399A		
Fracture toughness			
Micropyretic synthesis of tough NiAl alloys.	905-918B		
Fracture toughness of polycrystalline NiAl from finite-element analysis of miniaturized disk-bend test results.	991-996A		
Microstructure and mechanical behavior of the NiAl-TiC in situ composite.	1079-1087A		
Simulation of crack propagating in discontinuously reinforced metal matrix composite.	2149-2157A		
Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling.	2245-2254A		
Damage effect on the fracture toughness of nodular cast iron. II. Damage zone characterization ahead of a crack tip.	2255-2262A		
The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates.	2625-2636A		
Fracture toughness, Alloying effects			
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A		
Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy.	1399-1415A		

- Fracture toughness, Coating effects**
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings. 2773-2779A
- Fracture toughness, Composition effects**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
- Fracture toughness, Cooling effects**
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Fracture toughness, Diffusion effects**
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
- Fracture toughness, Heating effects**
The effect of the austenitizing heat-treatment variables on the fracture toughness of high-speed steel. 2089-2099A
- Fracture toughness, Low temperature effects**
Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium. 2297-2307A
- Fracture toughness, Microstructural effects**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys. 795-807A
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
Fractal fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
Effects of microstructure on the fracture toughness of Ti₃Al-based titanium aluminides. 1357-1365A
Influence of microstructure on fracture toughness of austempered ductile iron. 1457-1470A
- Fracture toughness, Temperature effects**
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling. 1815-1829A
Ductile-phase toughening in V-V₅Si in situ composites. 2555-2564A
- Fracture toughness, Welding effects**
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Fracturing**
Microfracture behavior of Al-SiC composites under dynamic loading. 2162-2170A
- Fracturing, Composition effects**
Interfacial bonding in spray-formed metal matrix composites. 1095-1098A
- Fracturing, Heating effects**
Deformation and fracture behavior of two Al-Mg-Si alloys. 1489-1497A
- Fracturing, High temperature effects**
High strain rate torsional behavior of an ultrahigh carbon steel (1.8% C-1.6% Al) at elevated temperature. 1913-1920A
- Fracturing, Impurity effects**
Effect of impurity hydrogen on the deformation and fracture in an Al-5 mass% Mg alloy. 2291-2295A
- Fragmentation, Cooling effects**
The influence of convection during solidification on fragmentation of the mushy zone of a model alloy. 875-883A
- Free energy**
A model for calculating interaction coefficients between elements in liquid and iron-base alloy. 109-113B
Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the CrO-Cr₂O₃-SiO₂-CaO system. 235-242B
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
Phase equilibria in the titanium-oxygen system. 447-453B
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
Studies on the thermodynamic stability of silver selenide. 519-522B
Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂". 723-725B
- Free energy, Alloying effects**
The antiphase boundary energies of L1₂ ordered Ni_{74.5}Pd_{25.5} alloy. 1092-1095A
- Friction welding**
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Frictional wear**
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Frictional wear, Composition effects**
Wear behavior of as-cast ZnAl27/SiC particulate metal-matrix composites under lubricated sliding condition. 1951-1955A
- Gadolinium, Binary systems**
Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
- Gallium, Diffusion**
A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
- Gallium base alloys, Phases (state of matter)**
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Gallium compounds, Crystal lattices**
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Galvanic corrosion, Field effects**
Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Galvanizing**
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply. 2433-2435A
- Gas flow**
A numerical investigation of gas flow effects on high-pressure gas atomization due to melt tip geometry variation. 935-941B
- Gas metal arc welding, Automation**
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool. 509-516B
- Gas tungsten arc welding**
A mathematical model of gas tungsten arc welding considering the cathode and the free surface of the weld pool. 679-686B
- Gas turbine engines, Casting**
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
- Gas turbine engines, Materials selection**
Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy. 1945-1949A
- Gas turbine engines, Materials substitution**
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
Fatigue crack growth through alloyed niobium, Nb-Cr₂Nb, and Nb-Nb₃Si₃ in situ composites. 1297-1314A
- Gas turbine engines, Mechanical properties**
An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply [75]₄ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
- Glasslike dislocations**
Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- Gold, Binary systems**
Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
- Gold, Coatings**
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Gold, Diffusion**
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
- Gold, Extraction**
The electrochemical behavior of gold in ammoniacal solutions at 75°C. 5-12B
- Gold, Recovering**
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites. 795-804B
Thermodynamic modeling of selenide matte converting. 811-819B
- Gold base alloys, Coatings**
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Gold compounds, Reactions (chemical)**
Discussion of "The adsorption kinetics of dicyanoaurate and dicyanoargentate ions in activated carbon" and reply. 345-350B
- Grain boundaries**
Analysis of orientation clustering in a directionally solidified nickel-based ingot. 229-236A

- Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy. 1945-1949A
- Grain boundaries, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
- Grain boundaries, Deformation effects**
Microtexture and grain boundary evolution during microstructural refinement processes in Supral 2004. 1879-1887A
- Grain boundaries, Diffusion**
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- Grain boundaries, Heating effects**
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
- Grain boundary migration**
Grain boundary mobility during recrystallization of copper. 749-754A
- Grain boundary sliding**
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
- Grain boundary sliding, Deformation effects**
Microtexture and grain boundary evolution during microstructural refinement processes in Supral 2004. 1879-1887A
- Grain growth**
Simulation of recrystallization microstructures and textures: effects of preferential growth. 15-25A
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Primary particle melting rates and equiaxed grain nucleation. 169-173B
Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
Analysis of orientation clustering in a directionally solidified nickel-based ingot. 229-236A
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
Modeling time dependence of the average interface migration rate in site-saturated recrystallization. 939-946A
- Grain growth, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
- Grain growth, Heating effects**
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
Analysis of grain growth in a two-phase gamma titanium aluminide alloy. 947-954A
- Grain growth, Pressure effects**
Gravitational effects on grain coarsening during liquid-phase sintering. 215-221A
- Grain orientation**
Ultrasonic backscattering in duplex microstructures: theory and application to titanium alloys. 91-104A
- Grain orientation, Heating effects**
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Grain refinement, Deformation effects**
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Grain size**
Simulation of recrystallization microstructures and textures: effects of preferential growth. 15-25A
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy. 1205-1211A
Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
- Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium. 2297-2307A
Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy. 2335-2341A
The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
Effect of substrate grain size on iron-zinc reaction kinetics during hot-dip galvanizing. 2683-2694A
- Grain size, Composition effects**
Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si. 681-687A
- Grain size, Cooling effects**
Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals. 1417-1428A
- Grain size, Deformation effects**
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
Controlled drawing to produce desirable hardness and microstructural gradients in alloy 302 wire. 363-375A
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
Optimization of microstructure development during hot working using control theory. 1921-1930A
- Grain size, Heating effects**
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
Microstructure and mechanical properties of sputter-deposited Cu_{1-x}Ta_x alloys. 917-925A
- Grain size, Pressure effects**
Gravitational effects on grain coarsening during liquid-phase sintering. 215-221A
- Grain size, Temperature effects**
Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system. 1569-1580A
- Grain structure**
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Analysis of orientation clustering in a directionally solidified nickel-based ingot. 229-236A
Superplastic behavior of spray-deposited 5083 Al. 1059-1068A
Motion and remelting of dendrite fragments during directional solidification of a nickel-base superalloy. 1533-1542A
- Grain structure, Heating effects**
Study of the β - α phase transformations of a Ti-64 sheet induced from a high-temperature β state and a high-temperature α - β state. 51-61A
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys. 485-489A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Grain structure, High temperature effects**
Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels. 1607-1616A
- Graphite, Reactions (chemical)**
Kinetics of reduction of MnO in powder mixtures with carbon. 307-319B
On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
Reaction mechanism on the smelting reduction of iron ore by solid carbon. 1019-1028B
- Gravitation**
Gravitational effects on grain coarsening during liquid-phase sintering. 215-221A
On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
Solidification of hypereutectic Al-38 wt.% Cu alloy in microgravity and in unit gravity. 1245-1250A
- Growth rate**
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel. 629-635A
- Growth rate, Diffusion effects**
On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
- Growth rate, Microstructural effects**
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A

- Growth rate, Pressure effects**
Gravitational effects on grain coarsening during liquid-phase sintering. 215-221A
- Growth rate, Stress effects**
High-temperature crack growth in 304 stainless steel under mixed-mode loading conditions. 763-773A
- Guinier Preston zone**
Microstructure of Ti-48.2 at.% Ni shape memory thin films. 1985-1991A
- Hafnium, Mechanical properties**
Plastic deformation of hafnium under uniaxial compression. 1479-1487A
- Hall Heroult process**
Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data. 81-86B
Intelligent control of the feeding of aluminum electrolytic cells using neural networks. 215-221B
- Hardenability, Composition effects**
Bainitic chromium-tungsten steels with 3% chromium. 335-345A
Effect of the Ti/N ratio on the hardenability and mechanical properties of a quenched-and-tempered C-Mn-B steel. 2027-2035A
- Hardness**
The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates. 2625-2636A
- Hardness, Alloying effects**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Hardness, Composition effects**
Effect of the Ti/N ratio on the hardenability and mechanical properties of a quenched-and-tempered C-Mn-B steel. 2027-2035A
- Hardness, Deformation effects**
Cyclic deformation behavior of a transformation-induced plasticity-aided dual-phase steel. 2637-2644A
- Hardness, Heating effects**
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy. 1809-1814A
A study of the mechanism of hardness change of Al-Zn-Mg alloy during retrogression reaging treatments by small angle x-ray scattering (SAXS). 2067-2071A
The effect of the austenitizing heat-treatment variables on the fracture toughness of high-speed steel. 2089-2099A
- Hardness, Impurity effects**
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- Hardness, Microstructural effects**
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- Hardness, Welding effects**
CO₂ laser beam welding of 6061-T6 aluminum alloy thin plate. 2657-2662A
- Heap leaching**
Metal extraction from ores by heap leaching. 529-545B
- Heat affected zone, Mechanical properties**
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
CO₂ laser beam welding of 6061-T6 aluminum alloy thin plate. 2657-2662A
- Heat affected zone, Microstructure**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Heat affected zone, Phase transformations**
An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
- Heat of formation**
Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
Phase equilibria in the titanium-oxygen system. 447-453B
Enthalpies of formation of liquid (copper+manganese) alloys. 473-478B
Studies on the thermodynamic stability of silver selenide. 519-522B
Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂". 723-725B
Enthalpies of formation of liquid binary (copper-iron, cobalt, and nickel) alloys. 1119-1130B
Determination of kinetic parameters using differential thermal analysis—application to the decomposition of CaCO₃. 1157-1164B
- Heat of mixing**
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
Enthalpies of formation of liquid (copper+manganese) alloys. 473-478B
- Heat of vaporization**
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al. 2183-2188A
- Heat resistant steels, Welding**
Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals. 1417-1428A
- Heat transfer**
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
A mathematical model of gas tungsten arc welding considering the cathode and the free surface of the weld pool. 679-686B
Wall-to-bed heat transfer in a circulating fluidized bed for the reduction of iron ore particles. 713-720B
Solidification of undercooled Fe-Cr-Ni alloys. III. Phase selection in chill casting. 2385-2395A
- Heat transfer, Size effects**
Multiphase oxidation of metals. 209-214B
- Helium, Impurities**
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Heterogeneous structure**
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
- Hexagonal lattice**
Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys. 527-536A
- High carbon steels, Mechanical properties**
High strain rate torsional behavior of an ultrahigh carbon steel (1.8% C-1.6% Al) at elevated temperature. 1913-1920A
Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
- High carbon steels, Phase transformations**
A new model for the volume fraction of martensitic transformations. 2499-2506A
- High pressure**
A numerical investigation of gas flow effects on high-pressure gas atomization due to melt tip geometry variation. 935-941B
- High speed tool steels, Mechanical properties**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
The effect of the austenitizing heat-treatment variables on the fracture toughness of high-speed steel. 2089-2099A
Correlation of microstructure and thermal fatigue property of three work rolls. 2595-2608A
- High strength low alloy steels, Corrosion**
Estimation of atmospheric corrosion of high-strength, low-alloy steels. 1274-1276A
- High strength low alloy steels, Welding**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- High strength steels, Coating**
Analysis and prevention of cracking phenomena occurring during softfacing of brass on AISI 4140 steel substrate. 2767-2773A
- High strength steels, Mechanical properties**
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
- High temperature**
Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys. 2049-2057A
- Historical metallurgy**
Report from a traveler: "a new silk road". 1975-1983A
- Holmium, Binary systems**
Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
- Homogeneity**
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite. 1261-1269A
The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
- Homogeneity, Alloying effects**
Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys. 2195-2199A

Homogenizing			
Minimizing beta flecks in the Ti-17 alloy.	899-903B	The leaching of nickeliferous laterite with ferric chloride.	995-1000B
X-ray study of phase transformations in martensitic Ni-Al alloys.	1133-1142A	Hysteresis	
Hot cladding		Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Analysis of the laser-cladding process for stellite on steel.	501-508B	Hysteresis, Temperature effects	
Hot dip galvanizing		Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition.	1347-1355A
Effect of phosphorous surface segregation on iron-zinc reaction kinetics during hot-dip galvanizing.	2695-2703A	Identification	
Hot dip galvanizing, Microstructural effects		Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Effect of substrate grain size on iron-zinc reaction kinetics during hot-dip galvanizing.	2683-2694A	Ilmenite, Reduction (chemical)	
Hot isostatic pressing		Reduction of ilmenite in a nonequilibrium hydrogen plasma.	517-519B
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides.	293-302A	Mechanically activated carbothermic reduction of ilmenite.	1115-1121A
Microstructure and mechanical behavior of the NiAl-TiC in situ composite.	1079-1087A	Impact	
Hot isostatic pressing, Alloying effects		Shock-induced martensitic transformations in near-equiatomic NiTi alloys.	1445-1455A
Effect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method.	223-228A	Impact strength, Alloying effects	
Hot rolling		Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A
Tensile properties of a thermomechanically processed ductile iron.	1213-1218A	Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys.	2049-2057A
Hot rolling, Composition effects		Impact strength, Composition effects	
Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si.	681-687A	Bainitic chromium-tungsten steels with 3% chromium.	335-345A
Hot workability		Impact strength, Cooling effects	
Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy.	2309-2321A	Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals.	1417-1428A
The effect of processing on the hot workability of Ti-48Al-2Nb-2Cr alloys.	2543-2553A	Impact strength, Microstructural effects	
Hot working		The influence of martensite on the strength and impact behavior of steel.	2073-2084A
Optimization of microstructure development during hot working using control theory.	1921-1930A	Impact strength, Radiation effects	
Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions.	2233-2244A	Modeling Charpy impact energy property changes using a Bayesian method.	1181-1193A
Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy.	2309-2321A	Impact strength, Temperature effects	
Hydrodynamics		An overview of the principles of modeling Charpy impact energy data using statistical analyses.	2609-2623A
The modeling of low phenomena in air-agitated Pachuka tanks.	727-732B	Impact tests	
Hydrogen, Alloying elements		Bainitic chromium-tungsten steels with 3% chromium.	335-345A
Fatigue crack growth behavior in niobium-hydrogen alloys.	2059-2065A	Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.	775-784A
Hydrogen, Diffusion		Modeling Charpy impact energy property changes using a Bayesian method.	1181-1193A
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel.	191-197A	Impurities, Diffusion	
The effect of hydrogen on the fracture toughness of alloy X-750.	817-823A	A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy.	563-582A
Hydrogen, Impurities		A modified "hole" theory for solute impurity diffusion in liquid metals.	583-593A
Effect of impurity hydrogen on the deformation and fracture in an Al-5 mass% Mg alloy.	2291-2295A	Inclusions	
Hydrogen, Reactions (chemical)		A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite.	237-243A
Reduction of ilmenite in a nonequilibrium hydrogen plasma.	517-519B	Inclusions, Crystal growth	
Hydrogen, Solubility		Effect of alloying element M (M=C, Fe, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.	259-264B
Evaluation of interaction coefficient in Al-Cu-H alloy.	625-632B	Inclusions, Reactions (chemical)	
Hydrogen embrittlement		Dissolution of hard-alpha inclusions in liquid titanium alloys.	1001-1010B
The effect of hydrogen on the fracture toughness of alloy X-750.	817-823A	Indentation, Microstructural effects	
Effect of impurity hydrogen on the deformation and fracture in an Al-5 mass% Mg alloy.	2291-2295A	Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying.	299-306B
Hydrogen embrittlement, Composition effects		Indium, Reactions (chemical)	
Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel.	191-197A	Interfacial reactions in molten Sn/Cu and In/Cu couples.	927-934B
Hydrogen embrittlement of Ni-Cr-Fe alloys.	655-663A	Indium, Trace elements	
Hydrometallurgy		Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy.	1399-1415A
The electrochemical behavior of gold in ammoniacal solutions at 75°C.	5-12B	Induction heating	
Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur.	25-32B	Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.	895-904A
Synergistic extraction of iron(III) at higher concentrations in D2EHPA-TBP mixed solvent systems.	181-189B	Infrared spectroscopy	
Steady-state modeling of zinc-ferrite hot-acid leaching.	701-711B	Recovery of copper through decontamination of synthetic solutions using modified barks.	13-23B
Object-oriented simulation of hydrometallurgical processes. I. Requirements and implementation.	777-784B	Ingot casting, Shape effects	
Object-oriented simulation of hydrometallurgical processes. II. Application to the Bayer process.	785-793B	Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots.	943-952B
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites.	795-804B		
Preparation of fine ceria powders by hydrolysis of cerium(IV) carboxylate solutions.	959-961B		
The leaching kinetics of chalcocite ($CuFeS_2$) in ammonium iodide solutions with iodine.	979-985B		
Preparation of ultra-high-purity copper by anion exchange.	987-993B		

Ingots, Casting

Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots.

943-952B

Ingots, Heat treatment

Minimizing beta flecks in the Ti-17 alloy.

899-903B

Ingots, Mechanical properties

The effect of processing on the hot workability of Ti-48Al-2Nb-2Cr alloys.

2543-2553A

Injection

Particle penetration during spray forming and Co injection of $\text{Ni}_3\text{Al}+\text{B}/\text{Al}_2\text{O}_3$ intermetallic matrix composite.

877-897B

Inoculation

Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys.
On the precipitation of TIC in liquid iron by reactions between different phases.

115-123B

471-483A

Inorganic salts, Reactions (chemical)

Prediction on thermodynamic properties of ternary molten salts from Wilson equation.

725-727B

Integrated circuits, Bonding

A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding.

2663-2671A

Interface reactions

Effect of elastic stress on two-phase binary diffusion couples.
Multiphase oxidation of metals.
Interfacial reactions in molten Sn/Cu and In/Cu couples.
Interfacial reactions in the squeeze-cast (SAFFIL-C)/SAE 329 Al composite.
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite.
Dynamics of solid/liquid interface shape evolution near an insoluble particle—an x-ray transmission microscopy investigation.
Interfacial characteristics for brazing of aluminum matrix composites with Al-12Si filler metals.

27-38A

209-214B

927-934B

1251-1259A

1261-1269A

2129-2135A

2673-2682A

Interface reactions, Coating effects

Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings.

2773-2779A

Interface reactions, Heating effects

Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys.

485-489A

Interfaces, Microstructure

Interfaces in MoSi_2 -SiC in situ composites synthesized by melt processing.

1901-1911A

Intergranular corrosion, Heating effects

Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting.

1223-1231A

Intergranular fracture, Alloying effects

Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.

775-784A

Intergranular fracture, Cooling effects

Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.

377-387A

Intergranular fracture, Diffusion effects

The effect of hydrogen on the fracture toughness of alloy X-750.

817-823A

Intergranular fracture, High temperature effects

High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron.

325-333A

Intergranular precipitation

A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy.

401-409A

Intergranular structure

A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy.
Competitive formation of inter- and intragranularly nucleated ferrite.

401-409A

2005-2013A

Intergranular structure, Impurity effects

Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy.

649-654A

Intergranular structure, Stress effects

Neutron diffraction measurements of intergranular strains in Monel-400.

2565-2576A

Intermetallic phases

The Ce-Mg-Y system.
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases.
Studies on the thermodynamic stability of silver selenide.
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga.

285-276A

517-525A

519-522B

729-742A

Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys.

795-807A

The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution.

909-915A

Fatigue crack growth through alloyed niobium, Nb-Cr₂Nb, and Nb-Nb₅Si₃ in situ composites.

1297-1314A

Microstructure of second-phase particles in Ti-5Al-4Sn-2Zr-1Mo-0.25Si-1Nd alloy.

1595-1605A

Microstructure of Ti-48.2 at.% Ni shape memory thin films.

1985-1991A

Intermetallic phases, Chemical analysis

Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases.

743-748A

Intermetallic phases, Coating effects

Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings.

2773-2779A

Intermetallic phases, Composition effects

The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys.

1011-1020A

Intermetallic phases, Cooling effects

Convection and channel formation in solidifying Pb-Sn alloys.
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al₂O₃.

859-866A

867-874A

The influence of convection during solidification on fragmentation of the mushy zone of a model alloy.

875-883A

The impact of cooling rates on the microstructure of Al-U alloys.

1035-1046A

Intermetallic phases, Crystal growth

Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au).
The effect of strontium on the Mg₂Si precipitation process in 6201 aluminum alloy.
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₀Ni₃₀ alloys.

187-190A

1289-1295A

2223-2232A

Intermetallic phases, Deformation effects

On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy.
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides.

257-263A

293-302A

Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply.

2433-2435A

Intermetallic phases, Heating effects

Analysis of grain growth in a two-phase gamma titanium aluminide alloy.

947-954A

Intermetallic phases, Reactions (chemical)

X-ray study of phase transformations in martensitic Ni-Al alloys.

1133-1142A

Intermetallic phases, Thermal properties

A thermodynamic description for the ternary Al-Mg-Cu system.
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al.

435-446A

2183-2188A

Intermetallic phases, Welding effects

Microstructural features of cracking in autogenous beryllium weldments.

673-680A

Intermetallics, Chemical analysis

Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases.

743-748A

Intermetallics, Composite materials

A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy.
Particle penetration during spray forming and Co injection of $\text{Ni}_3\text{Al}+\text{B}/\text{Al}_2\text{O}_3$ intermetallic matrix composite.
Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route.
Microstructure and mechanical behavior of the NiAl-TiC in situ composite.
Solidification paths and carbide morphologies in melt-processed MoSi_2 -SiC in situ composites.
Interfaces in MoSi_2 -SiC in situ composites synthesized by melt processing.
Ductile-phase toughening in V-V₃Si in situ composites.
Dislocations in continuous filament reinforced W/NiAl and Al₂O₃/NiAl composites.

401-409A

877-897B

1069-1077A

1079-1087A

1889-1900A

1901-1911A

2555-2564A

2755-2761A

Intermetallics, Crystal growth

Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy.

79-90A

Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au).

187-190A

Analysis of grain growth in a two-phase gamma titanium aluminide alloy.

947-954A

Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. I. Solidification behavior.

1735-1743A

Intermetallics, Mechanical properties

- Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
- The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified Li_2 titanium trialuminide. 179-186A
- Crystallographic study of fatigue cracking in $\text{Ni}_3\text{Al}(\text{CrB})$ single crystal. 665-672A
- Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys. 795-807A
- Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
- An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Fracture toughness of polycrystalline NiAl from finite-element analysis of miniaturized disk-bend test results. 991-996A
- The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Fractal fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
- Effects of microstructure on the fracture toughness of Ti_3Al -based titanium aluminides. 1357-1365A
- Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
- Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. 2309-2321A
- A new miniature mechanical testing procedure: application to intermetallics. 2577-2582A

Intermetallics, Microstructure

- Microstructure and properties of duplex $\delta\text{-Al}_3(\text{Ti}, \text{V})/\beta\text{-Ti}$, V alloys. 927-938A
- Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
- The antiphase boundary energies of L_{12} ordered $\text{Ni}_{74.5}\text{Pd}_2\text{Al}_{23.5}$ alloy. 1092-1095A

Intermetallics, Phase transformations

- Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. 537-544A
- Shock-induced martensitic transformations in near-equiatomic NiTi alloys. 1445-1455A
- Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A

Intermetallics, Powder technology

- Effect of copper addition on consolidating Ti_3Si_3 by the elemental powder-metalurgical method. 223-228A
- Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Microprecipitation synthesis of tough NiAl alloys. 905-918B
- Direct consolidation of $\gamma\text{-TiAl-Mn-Mo}$ from elemental powder mixtures and control of porosity through a basic study of powder reactions. 2723-2729A

Intermetallics, Reactions (chemical)

- Thermodynamics of calcium and oxygen in molten Ti_3Al . 956-959B

Internal friction, Heating effects

- High-temperature relaxations in aluminum studied by isothermal mechanical spectrometry. 1661-1665A

Interstitial impurities

- Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B

Intragranular structure

- A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
- Competitive formation of inter- and intragranularly nucleated ferrite. 2005-2013A

Investment casting, Alloying effects

- Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A

Investment casting, Quality control

- The effect of silica-containing binders on the titanium/face coat reaction. 919-926B

Investment castings, Quality control

- The effect of silica-containing binders on the titanium/face coat reaction. 919-926B

Iodination, Alloying effects

- Influence of short circuiting on the kinetics and mechanism of iodide film growth on Ag and Cd-doped Ag. 1189-1198B

Iodine, Environment

- Influence of short circuiting on the kinetics and mechanism of iodide film growth on Ag and Cd-doped Ag. 1189-1198B

Iridium base alloys, Mechanical properties

- Influence of cerium additions on high-temperature-impact ductility and fracture behavior of iridium alloys. 2049-2057A

Iron, Binary systems

- Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A

Iron, Composite materials

- Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A

Iron, Diffusion

- A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A

Iron, Extraction

- Synergistic extraction of iron(III) at higher concentrations in D2EHPA-TBP mixed solvent systems. 181-189B
- Wall-to-bed heat transfer in a circulating fluidized bed for the reduction of iron ore particles. 713-720B
- Influence of slag and foam characteristics on reduction of FeO-containing slags by solid carbon. 805-810B

Iron, Impurities

- Thermodynamic properties of titanium and iron in molten silicon. 861-867B

Iron, Mechanical properties

- A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A

Iron, Melting

- The polynomial representation of thermodynamic properties in dilute solutions. 869-876b

Iron, Oxidation

- Multiphase oxidation of metals. 209-214B

Iron, Phase transformations

- Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy. 63-77A

Iron, Powder technology

- Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A

Iron, Quaternary systems

- An assessment of the Ca-Fe-O-Si system. 577-596B

Iron, Reactions (chemical)

- Thermodynamics of iron oxide in Fe₂O-dilute $\text{CaO-Al}_2\text{O}_3\text{-Fe}_2\text{O}$ fluxes at 1873K. 243-250B
- Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems. 553-562B
- Influence of chromium and nickel on the dissociation of CO_2 on carbon-saturated liquid iron. 639-645B
- Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Deoxidation equilibria of calcium and magnesium in liquid iron. 1131-1139B
- Effect of substrate grain size on iron-zinc reaction kinetics during hot-dip galvanizing. 2683-2694A

Iron, Refining

- Establishment time of liquid flow in a bath agitated by bottom gas injection. 605-612B
- Copper removal from carbon-saturated molten iron with $\text{Al}_2\text{S}_3\text{-FeS}$ flux. 1029-1037B

Iron, Ternary systems

- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- An assessment of the Fe-O-Si system. 563-576B
- The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K. 647-650B
- Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply. 2433-2435A

Iron, Trace elements

- Microstructural features of cracking in autogenous beryllium weldments. 673-680A

Iron and steel making

- Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
- Nonwetting flow of a liquid through a packed bed with gas cross-flow. 597-604B

Iron carbides, Crystal growth

- Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B

- Iron compounds, Chemical analysis**
Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Iron compounds, Mechanical properties**
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
- Iron compounds, Powder technology**
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Iron compounds, Reactions (chemical)**
The leaching of nickeliferous laterite with ferric chloride. 995-1000B
- Iron ores, Reduction (chemical)**
Kinetic studies of the reduction of FeO and FeWO₄ by hydrogen. 613-618B
Wall-to-bed heat transfer in a circulating fluidized bed for the reduction of iron ore particles. 713-720B
Reaction mechanism on the smelting reduction of iron ore by solid carbon. 1019-1028B
- Iron oxides, Physical properties**
Experimental studies of the viscosities in the CaO-Fe₂O-SiO₂ slags. 827-834B
- Iron oxides, Reactions (chemical)**
Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal. 47-57B
- Iron oxides, Reduction (chemical)**
Kinetic studies of the reduction of FeO and FeWO₄ by hydrogen. 613-618B
Influence of slag and foam characteristics on reduction of FeO-containing slags by solid carbon. 805-810B
Reduction kinetics of liquid iron oxide-containing slags by carbon monoxide. 821-826B
- Ironmaking**
Modeling the discontinuous liquid flow in a blast furnace. 333-343B
Reaction mechanism on the smelting reduction of iron ore by solid carbon. 1019-1028B
- Isothermal treatment**
Analysis of grain growth in a two-phase gamma titanium aluminide alloy. 947-954A
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
- Isothermal treatment, Composition effects**
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- J Integral**
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling. 1815-1829A
- Jarosite process**
The behavior of thallium during jarosite precipitation. 765-776B
- Joints, Mechanical properties**
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Kinetics**
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
- Knoop hardness, Deformation effects**
Controlled drawing to produce desirable hardness and microstructural gradients in alloy 302 wire. 363-375A
- Ladle metallurgy**
Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
Deoxidation equilibria of calcium and magnesium in liquid iron. 1131-1139B
- Lamellar structure**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
The occurrence and periodicity of oscillating peritectic microstructures developed during directional solidification. 1543-1552A
General existence of ledges on α_1 plates in Cu-Zn-Al alloys. 1617-1623A
Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
Plate-shaped transformation products in zirconium-base alloys. 2201-2216A
- Lamellar structure, Composition effects**
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Lamellar structure, Cooling effects**
The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
- Lamellar structure, Heating effects**
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Lamellar structure, Radiation effects**
Microstructural modification of plain carbon steels irradiated by high-energy electron beam. 637-647A
- Laminates, Mechanical properties**
An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply [75]₄ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
- Laser beam heating**
Phase transitions and microstructure of a laser-induced steel surface alloying. 1699-1703A
- Laser beam melting**
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Laser beam welding**
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 687-700B
CO₂ laser beam welding of 6061-T6 aluminum alloy thin plate. 2657-2662A
- Laser processing**
Analysis of the laser-cladding process for stellite on steel. 501-508B
- Lasers**
Evaluation of six k - ϵ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Latent heat, Microstructural effects**
Calculation of solidification-related thermophysical properties for steels. 281-297B
- Laterites, Reactions (chemical)**
Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
- Laterites, Reduction (chemical)**
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites. 795-804B
- Lattice parameters**
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Lattice parameters, Heating effects**
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
- Lattice vacancies, Field effects**
Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Laves phase**
The Ce-Mg-Y system. 265-276A
Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
- Leaching**
Kinetics of chlorination and carbochlorination of pure tantalum and niobium pentoxides. 223-233B
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
The modeling of low phenomena in air-agitated Pachuka tanks. 727-732B
The leaching kinetics of chalcocopyrite (CuFeS₂) in ammonium iodide solutions with iodine. 979-985B
The leaching of nickeliferous laterite with ferric chloride. 995-1000B
- Lead (metal), Diffusion**
A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
- Lead (metal), Extraction**
Thermodynamic optimization of the systems PbO-SiO₂, PbO-ZnO, ZnO-SiO₂ and PbO-ZnO-SiO₂. 1011-1018B
- Lead (metal), Mechanical properties**
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Lead (metal), Oxidation**
Kinetics of hydrothermal oxidation of granular Pb metal to PbO powder in sodium hydroxide solutions. 33-37B
- Lead base alloys, Directional solidification**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- Lead base alloys, Microstructure**
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B

Leaded bronzes, Mechanical properties

Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions.

809-815A

Lime, Binary systems

Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂".

723-725B

Lime, Physical properties

Experimental studies of the viscosities in the CaO-Fe₂O₃-SiO₂ slags.

827-834B

Lime, Reactions (chemical)

Thermodynamics of iron oxide in Fe₂O₃-dilute CaO+Al₂O₃+Fe₂O₃ fluxes at 1873K.
Reduction of molybdenite with carbon in the presence of lime.
Dissolution of alumina in mold fluxes.
Kinetic studies on the dissolution of nitrogen in CaO-Al₂O₃, CaO-SiO₂, and CaO-CaF₂ melts.
Thermodynamics of calcium and oxygen in molten Ti₃Al.

243-250B

265-274B

275-279B

633-638B

956-959B

Lime, Solubility

Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and CaO_{95.5}-B₂O₃ slags.

1257-1259B

Liquid flow

Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling.
Mass transfer between solid and liquid in a gas-stirred vessel.
Evaluation of six $k-\epsilon$ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements.
Modeling the discontinuous liquid flow in a blast furnace.
Characterization of the flow in the molten metal sump during direct chill aluminum casting.
Nonwetting flow of a liquid through a packed bed with gas cross-flow.
Bubble and liquid flow characteristics in a Wood's metal bath stirred by bottom helium gas injection.

87-94B

95-102B

321-332B

333-343B

491-499B

597-604B

1053-1061B

Liquid metals

Development of a multineedle electroresistivity probe for measuring bubble characteristics in molten metal baths.
The shape of bubbles rising near the nozzle exit in molten metal baths.

409-416B

417-423B

Liquid metals, Crystal growth

Primary particle melting rates and equiaxed grain nucleation.
Modeling of solidification of molten metal droplet during atomization.

169-173B

1249-1255B

Liquid metals, Diffusion

Absorption kinetics and mechanisms of carbon monoxide in liquid niobium.

455-463B

Liquid metals, Phase transformations

Enthalpies of formation of liquid (copper+manganese) alloys.

473-478B

Liquid metals, Physical properties

Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing.
Establishment time of liquid flow in a bath agitated by bottom gas injection.
Bubble and liquid flow characteristics in a Wood's metal bath stirred by bottom helium gas injection.

135-148B

605-612B

1053-1061B

Liquid metals, Reactions (chemical)

Influence of chromium and nickel on the dissociation of CO₂ on carbon-saturated liquid iron.
On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity.
Interfacial reactions in molten Sn/Cu and In/Cu couples.
Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel.
Thermodynamics of calcium and oxygen in molten Ti₃Al.
Dissolution of hard-alpha inclusions in liquid titanium alloys.
Thermodynamics of phosphorus in molten Si-Fe and Si-Mn alloys.

639-645B

707-719A

927-934B

953-956B

956-959B

1001-1010B

1151-1155B

Liquid metals, Surface properties

Surface tension and wettability studies of liquid Fe-Ni-O alloys.

465-472B

Liquid metals, Thermal properties

A model for calculating interaction coefficients between elements in liquid and iron-base alloy.

109-113B

Liquid phase sintering

Gravitational effects on grain coarsening during liquid-phase sintering.
Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys.
A study on the improvement of the sintered density of W-Ni-Mn heavy alloy.
Supersolidus liquid-phase sintering of prealloyed powders.

215-221A

485-489A

835-839B

1553-1567A

Liquidus

Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the CrO-Cr₂O₃-SiO₂-CaO system.

235-242B

Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio.

447-451A

The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K.

647-650B

Solidification paths and carbide morphologies in melt-processed MoSi₂-SiC in situ composites.

1889-1900A

Lithium compounds, Reactions (chemical)

Thermodynamics of mixed oxide compounds, Li₂O-Ln₂O₃ (Ln=Nd or Ce).

1103-1110B

Losses

Copper losses and thermodynamic considerations in copper smelting.

191-200B

Low alloy steels, Composite materials

On the precipitation of TiC in liquid iron by reactions between different phases.

471-483A

Low alloy steels, Joining

Computer simulation of multicomponent diffusion in joints of dissimilar steels.

303-308A

Low alloy steels, Mechanical properties

Fracture mechanics approach to hydrogen-assisted microdamage in eutectoid steel.

191-197A

Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions.

2233-2244A

Low alloy steels, Microstructure

A variant selection model for predicting the transformation texture of deformed austenite.

1755-1768A

Low alloy steels, Phase transformations

Identification and range quantification of steel transformation products by transformation kinetics.
Microstructural evolution during thermomechanical processing of a Ti-Nb interstitial-free steel just below the Ar₃ temperature.

5-14A

1437-1443A

Low alloy steels, Thermal properties

Calculation of solidification-related thermophysical properties for steels.

281-297B

Low carbon steels, Cladding

Analysis of the laser-cladding process for stellite on steel.

501-508B

Low carbon steels, Coating

Effect of substrate grain size on iron-zinc reaction kinetics during hot-dip galvanizing.
Effect of phosphorous surface segregation on iron-zinc reaction kinetics during hot-dip galvanizing.

2683-2694A

2695-2703A

Low carbon steels, Crystal growth

Discussion of "An analysis of static recrystallization during continuous, rapid heat treatment" and authors' reply.

2763-2765A

Low carbon steels, Irradiation

Microstructural modification of plain carbon steels irradiated by high-energy electron beam.

637-647A

Low carbon steels, Microstructure

Precipitation behavior in ultra-low-carbon steels containing titanium and niobium.

1769-1780A

Low carbon steels, Oxidation

Oxidation of low carbon steel in multicomponent gases. I.
Reduction mechanisms during isothermal oxidation.
Oxidation of low carbon steel in multicomponent gases. II.
Reaction mechanisms during reheating.

1633-1641A

1643-1651A

Low carbon steels, Thermal properties

Calculation of solidification-related thermophysical properties for steels.

281-297B

Low cycle fatigue

A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C.

347-361A

Low cycle fatigue, Temperature effects

Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition.

1347-1355A

Lubrication

Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing.
Wear behavior of as-cast ZnAl27/SiC particulate metal-matrix composites under lubricated sliding condition.

491-502A

1951-1955A

Luders lines, Deformation effects

Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion.
Plastic deformation of hafnium under uniaxial compression.

1047-1057A

1479-1487A

Lutetium, Binary systems

Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au).

187-190A

Magnesite refractories, Reactions (chemical) Minimization of hexavalent chromium in magnesite-chrome refractory.	855-859B
Magnesium, Mechanical properties A thermodynamic analysis of the empirical power relationships for creep rate and rupture time.	1831-1842A
Magnesium, Reactions (chemical) Deoxidation equilibria of calcium and magnesium in liquid iron.	1131-1139B
Magnesium, Ternary systems The Ce-Mg-Y system. A thermodynamic description for the ternary Al-Mg-Cu system. A thermodynamic description of the Al-Mg-Zn system.	265-276A 435-446A 1725-1734A
Magnesium, Trace elements Microstructural features of cracking in autogenous beryllium weldments. Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy.	673-680A 1399-1415A
Magnesium base alloys, Crystal lattices The Ce-Mg-Y system.	265-276A
Magnesium compounds, Crystal growth The effect of strontium on the Mg ₂ Si precipitation process in 6201 aluminum alloy.	1289-1295A
Magnesium oxide, Reactions (chemical) Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel.	953-956B
Magnetic materials, End uses Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Magnetic permeability Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Magnetic permeability, Composition effects A new nickel-aluminum bronze alloy with low magnetic permeability.	689-697A
Magnetite, Reduction (chemical) Reduction kinetics of liquid iron oxide-containing slags by carbon monoxide.	821-826B
Magnetostriction Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Manganese, Alloying additive The role of manganese and copper in the eutectoid transformation of spheroidal graphite cast iron. Reduction and removal of martensite stabilization in Cu-Zn-Al-Mn-Zr shape memory alloys.	2015-2025A 2765-2767A
Manganese, Alloying elements Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.	251-258B 259-264B
Manganese, Binary systems Enthalpies of formation of liquid (copper+manganese) alloys.	473-478B
Manganese, Impurities Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy.	125-133B 149-159B
Manganese, Reactions (chemical) Thermodynamic properties of solid Pt-Mn, Pt-Cr, and Pt-Mn-Cr alloys at 1500°C. Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems. Thermodynamics of MnO, FeO, and phosphorus in steelmaking slags with high MnO contents.	547-552B 553-562B 1111-1118B
Manganese, Recovering Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur. Activity-composition relations of MnO in MnO-CrO _x -CaO-SiO ₂ -containing melts.	25-32B 619-624B
Manganese, Trace elements Microstructural features of cracking in autogenous beryllium weldments.	673-680A
Manganese base alloys, Phase transformations Enthalpies of formation of liquid (copper+manganese) alloys.	473-478B
Manganese base alloys, Physical properties The effect of carbon on the loss of room-temperature damping capacity in copper-manganese alloys.	105-112A
Manganese base alloys, Reactions (chemical) Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems.	553-562B
Manganese compounds, Crystal lattices Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga.	729-742A
Manganese compounds, Reduction (chemical) Kinetics of reduction of MnO in powder mixtures with carbon.	307-319B
Manganese compounds, Solubility Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and CaO-BaO-B ₂ O ₃ slags.	1257-1259B
Manganese steels, Mechanical properties Effect of the Ti/N ratio on the hardenability and mechanical properties of a quenched-and-tempered C-Mn-B steel.	2027-2035A
Manganese steels, Welding Further study on the mechanism of the ductile-to-brittle fracture transition in C-Mn base and weld steel.	1689-1698A
Maraging steels, Microstructure Texture development in dual-phase cold-rolled 18% Ni maraging steel.	2459-2465A
Marking Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A
Martensite Discussion of "A study on morphology and plate mean dimensions in Fe-Ni and Fe-Ni-Cr alloys". The influence of martensite on the strength and impact behavior of steel.	721-722A 2073-2084A
Martensite, Heating effects Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite.	377-387A 545-561A
Martensitic stainless steels, Microstructure Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite.	545-561A
Martensitic stainless steels, Welding Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals.	1417-1428A
Martensitic transformations High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. X-ray study of phase transformations in martensitic Ni-Al alloys. Fractal fracture and transformation toughening in CuNiAl single crystal. Plate-shaped transformation products in zirconium-base alloys. A new model for the volume fraction of martensitic transformations.	325-333A 537-544A 1133-1142A 1337-1340A 2201-2216A 2499-2506A
Martensitic transformations, Alloying effects Discussion of "A study on morphology and plate mean dimensions in Fe-Ni and Fe-Ni-Cr alloys". Reduction and removal of martensite stabilization in Cu-Zn-Al-Mn-Zr shape memory alloys.	721-722A 2765-2767A
Martensitic transformations, Cooling effects Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments.	453-460A 461-469A
Martensitic transformations, Deformation effects Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron.	1143-1156A
Martensitic transformations, Heating effects Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy. Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy.	63-77A 377-387A 545-561A 955-967A
Martensitic transformations, Microstructural effects Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy.	2335-2341A
Martensitic transformations, Radiation effects Microstructural modification of plain carbon steels irradiated by high-energy electron beam. Surface hardening of a ductile-cast iron roll using high-energy electron beams.	637-647A 1499-1508A

Martensitic transformations, Stress effects

- Shock-induced martensitic transformations in near-equiatomic NiTi alloys. 1445-1455A

Mass flow

- Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions. 2233-2244A

Mass spectroscopy

- The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution. 909-915A

Mass transfer

- Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B

Massive type transformation, Heating effects

- Transformations in α_2 -Ti titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A

Mathematical analysis

- Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
On the rule of additivity in phase transformation kinetics. 287-291A
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
The polynomial representation of thermodynamic properties in dilute solutions. 869-876b
Estimation of atmospheric corrosion of high-strength, low-alloy steels. 1274-1276A
On the evaluation of efficiency parameters in processing maps. 1581-1582A
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
On the Gage's stability criterion in processing maps. 2170-2173A
The evolution of solutions: a thermodynamic analysis of mechanical alloying. 2189-2194A

Mathematical models

- Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal. 47-57B
Ultrasonic backscattering in duplex microstructures: theory and application to titanium alloys. 91-104A
Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
The effect of carbon on the loss of room-temperature damping capacity in copper-manganese alloys. 105-112A
A model for calculating interaction coefficients between elements in liquid and iron-base alloy. 109-113B
Modelling the mechanical behavior of tantalum. 113-122A
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
Rate control of the flash reduction of zinc calcines. 201-207B
Calculation of solidification-related thermophysical properties for steels. 281-297B
Computer simulation of multicomponent diffusion in joints of dissimilar steels. 303-308A
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
Evaluation of six k- ϵ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
Modeling the discontinuous liquid flow in a blast furnace. 333-343B
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
A mechanics-based approach to cyclic oxidation. 411-422A
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot. 479-489B
Characterization of the flow in the molten metal sump during direct chill aluminum casting. 491-499B
Analysis of the laser-cladding process for stellite on steel. 501-508B
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool. 509-516B

- Nonwetting flow of a liquid through a packed bed with gas cross-flow. 597-604B
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel. 629-635A
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
A mathematical model of gas tungsten arc welding considering the cathode and the free surface of the weld pool. 679-686B
Steady-state modeling of zinc-ferrite hot-acid leaching. 701-711B
Wall-to-bed heat transfer in a circulating fluidized bed for the reduction of iron ore particles. 713-720B
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
The modeling of low phenomena in air-agitated Pachuka tanks. 727-732B
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
Thermodynamic modeling of selenide matte converting. 811-819B
A numerical investigation of gas flow effects on high-pressure gas atomization due to melt tip geometry variation. 935-941B
Modeling time dependence of the average interface migration rate in site-saturated recrystallization. 939-946A
Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots. 943-952B
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminides. 979-989A
Modeling of solidification of metal-matrix particulate composites with convection. 1165-1183B
Models for the isothermal coarsening of secondary dendrite arms in multicomponent alloys. 1185-1187B
Modeling of solidification of molten metal droplet during atomization. 1249-1255B
Modeling solid solution strengthening in nickel alloys. 1329-1335A
An analytical model for optimal directional solidification using liquid metal cooling. 1377-1383A
Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
The occurrence and periodicity of oscillating peritectic microstructures developed during directional solidification. 1543-1552A
Supersolidus liquid-phase sintering of prealloyed powders. 1553-1567A
Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling. 1815-1829A
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
On the Gage's stability criterion in processing maps. 2170-2173A
The evolution of solutions: a thermodynamic analysis of mechanical alloying. 2189-2194A
Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions. 2233-2244A
Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling. 2245-2254A
Damage effect on the fracture toughness of nodular cast iron. II. Damage zone characterization ahead of a crack tip. 2255-2262A
Contact of crack surfaces during fatigue. I. Formulation of the model. 2263-2275A
Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A
Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium. 2297-2307A
Influence of limit stress states and yield criteria on the prediction of forming limit strains in sheet metals. 2323-2333A
Modeling of rolling texture development in a ferritic chromium steel. 2343-2351A
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
A new model for the volume fraction of martensitic transformations. 2499-2506A
Experimental evaluation of a polycrystal deformation modeling scheme using neutron diffraction measurements. 2537-2541A
Eutectic reaction and nonconstant material parameters in micro-macroscopic modeling. 2705-2714A
Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite. 2741-2753A

Measurement

- Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and standard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂". 723-725B

Mechanical alloying

- Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B

- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Amorphization reaction of Ni-Ta powders during mechanical alloying. 1429-1435A
- The evolution of solutions: a thermodynamic analysis of mechanical alloying. 2189-2194A
- Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply. 2433-2435A
- Mechanical alloying, Temperature effects**
Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system. 1569-1580A
- Mechanical tests**
A numerical and experimental study of deformation characteristics of the plane strain punch stretching test. 1853-1859A
A new miniature mechanical testing procedure: application to intermetallics. 2577-2582A
- Medium carbon steels, Irradiation**
Microstructural modification of plain carbon steels irradiated by high-energy electron beam. 637-647A
Phase transitions and microstructure of a laser-induced steel surface alloying. 1699-1703A
- Medium carbon steels, Mechanical properties**
Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions. 2233-2244A
- Medium carbon steels, Metal working**
Optimization of microstructure development during hot working using control theory. 1921-1930A
- Melting points**
Discontinuity in normal spectral emissivity of solid and liquid copper at the melting point. 2507-2513A
- Melts, Reactions (chemical)**
Solubility of platinum in molten fluxes as a measure of basicity. Activity-composition relations of MnO in MnO-CrO_x-CaO-SiO₂-containing melts. 103-108B
619-624B
- Metal fibers, Composite materials**
A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
- Metal powders, Powder technology**
Modeling of solidification of molten metal droplet during atomization. 1249-1255B
- Metal powders, Synthesis**
A flame process for synthesis of unagglomerated, low-oxygen nanoparticles: application to Ti and TiB₂. 1199-1211B
- Metal scrap, Melting**
Influence of chromium and nickel on the dissociation of CO₂ on carbon-saturated liquid iron. 639-645B
Analysis of multicomponent evaporation in electron beam melting and refining of titanium alloys. 1227-1239B
- Metallic glasses, Crystal growth**
Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Metallic glasses, Magnetic properties**
Development of a pinned wall sensor using cobalt-rich, near-zero magnetostriuctive amorphous alloys. 423-434A
- Metallic glasses, Phase transformations**
Amorphization reaction of Ni-Ta powders during mechanical alloying. 1429-1435A
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
- Metastable phases**
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
The Ce-Mg-Y system. 265-276A
Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
Interfaces in MoSi₂-SiC in situ composites synthesized by melt processing. 1901-1911A
- Metastable phases, Chemical analysis**
Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Metastable phases, Cooling effects**
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
- Metastable phases, Crystal growth**
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
- Metastable phases, Heating effects**
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
- Microhardness, Deformation effects**
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
- Microhardness, Heating effects**
Microstructure and mechanical properties of sputter-deposited Cu_{1-x}Ta_x alloys. 917-925A
- Microhardness, Microstructural effects**
The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified L₂ titanium trialuminide. 179-186A
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Microhardness, Pressure effects**
Effects of applied pressure on the brazing of superplastic Inconel 718 superalloy. 1367-1376A
- Microporosity**
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity. 1157-1167A
- Microscopy**
Analysis of orientation clustering in a directionally solidified nickel-based ingot. 229-236A
- Minerals, Reduction (chemical)**
The modeling of low phenomena in air-agitated Pachuka tanks. 727-732B
- Modulus of elasticity**
Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling. 2245-2254A
- Modulus of elasticity, Heating effects**
Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy. 1809-1814A
- Mold fluxes, Reactions (chemical)**
Dissolution of alumina in mold fluxes. 275-279B
- Molds, Reactions (chemical)**
The effect of silica-containing binders on the titanium/face coat reaction. 919-926B
- Molybdenum, Alloying additive**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Molybdenum, Alloying elements**
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Molybdenum, Diffusion**
Element partitioning during coarsening of (γ - γ') Ni-Al-Mo alloys. Performance of molybdenum with UF₄ at high temperatures as a wall material for space reactors. 1943-1945A
2123-2128A
- Molybdenum, Extraction**
Reduction of molybdenite with carbon in the presence of lime. 265-274B
- Molybdenum, Mechanical properties**
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Molybdenum, Quinary systems**
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Molybdenum compounds, Composite materials**
Solidification paths and carbide morphologies in melt-processed MoSi₂-SiC in situ composites. 1889-1900A
Interfaces in MoSi₂-SiC in situ composites synthesized by melt processing. 1901-1911A
- Molybdenum disulfide, Reduction (chemical)**
Reduction of molybdenite with carbon in the presence of lime. 265-274B
- Molybdenum steels, Structural hardening**
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels. 621-627A
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A

Monitoring			
A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides.	1141-1149B	The leaching of nickeliferous laterite with ferric chloride. Effect of Pd, Cu, and Ni additions on the kinetics of NiCl ₂ reduction by hydrogen.	995-1000B 1241-1248B
Monoclinic lattice		Nickel, Mechanical properties	
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga.	729-742A	A thermodynamic analysis of the empirical power relationships for creep rate and rupture time.	1831-1842A
Mössbauer spectroscopy		Nickel, Powder technology	
Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases.	743-748A	Amorphization reaction of Ni-Ta powders during mechanical alloying.	1429-1435A
Nanomaterials, Mechanical properties		Nickel, Quinary systems	
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying.	299-306B	A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries.	439-445B
Nanomaterials, Phase transformations		Nickel, Recovering	
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti ₇₅ Ni ₂₅ alloys.	2223-2232A	Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur.	25-32B
Nanomaterials, Powder technology		Nickel, Refining	
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides.	293-302A	Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag.	429-438B
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.	895-904A	Nickel, Ternary systems	
A flame process for synthesis of unagglomerated, low-oxygen nanoparticles: application to Ti and TiB ₂ .	1199-1211B	C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C.	2453-2458A
Necking, Heating effects		Nickel, Trace elements	
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A	Microstructural features of cracking in autogenous beryllium weldments.	673-680A
Necking, High temperature effects		Nickel base alloys, Brazing	
High-temperature tensile ductility in WC-Co cemented carbides.	1843-1847A	Effects of applied pressure on the brazing of superplastic Inconel 718 superalloy.	1367-1376A
Neodymium compounds, Phases (state of matter)		Nickel base alloys, Casting	
Crystal structure determination by high resolution electron microscopy for (Sr _{0.85} Nd _{0.14}) ₃ Cu ₂ O ₅ intergrown with infinite-layer compound.	1111-1114A	Determination of the solidification curve of a Rene N4 superalloy.	503-504A
Neodymium compounds, Reactions (chemical)		Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy.	2143-2147A
Thermodynamics of mixed oxide compounds, Li ₂ O-Ln ₂ O ₃ (Ln=Nd or Ce).	1103-1110B	Nickel base alloys, Composite materials	
Neutron scattering, Alloying effects		Particle penetration during spray forming and Co injection of Ni ₃ Al-B/Al ₂ O ₃ intermetallic matrix composite.	877-897B
Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys.	2195-2199A	Fabrication of Al ₂ O ₃ -reinforced Ni ₃ Al composites by a novel in situ route.	1069-1077A
Neutrons		Microstructure and mechanical behavior of the NiAl-TiC in situ composite.	1079-1087A
On the blister formation in copper alloys due to the helium ion implantation.	755-762A	Nickel base alloys, Crystal growth	
New technology		Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings.	1582-1587A
Future steelmaking technologies and the role of basic research.	1963-1973A	Nickel base alloys, Diffusion	
Report from a traveler: "a new silk road".	1975-1983A	Element partitioning during coarsening of (γ - γ') Ni-Al-Mo alloys.	1943-1945A
Nickel, Alloying additive		Nickel base alloys, Directional solidification	
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels.	621-627A	Analysis of orientation clustering in a directionally solidified nickel-based ingot.	229-236A
Influence of chromium and nickel on the dissociation of CO ₂ on carbon-saturated liquid iron.	639-645B	Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification.	1517-1531A
Nickel, Alloying elements		Motion and remelting of dendrite fragments during directional solidification of a nickel-base superalloy.	1533-1542A
A new nickel-aluminum bronze alloy with low magnetic permeability.	689-697A	Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy.	1945-1949A
Precipitation behavior in ultra-low-carbon steels containing titanium and niobium.	1769-1780A	Nickel base alloys, Mechanical properties	
Nickel, Bonding		Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy.	135-147A
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding.	2663-2671A	Hydrogen embrittlement of Ni-Cr-Fe alloys.	655-663A
Nickel, Coatings		Crystallographic study of fatigue cracking in Ni ₃ Al(CrB) single crystal.	665-672A
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings.	2773-2779A	Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys.	795-807A
Nickel, Composite materials		The effect of hydrogen on the fracture toughness of alloy X-750.	817-823A
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying.	299-306B	Fracture toughness of polycrystalline NiAl from finite-element analysis of miniaturized disk-bend test results.	991-996A
Nickel, Diffusion		Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100.	997-1009A
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy.	563-582A	The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys.	1011-1020A
Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts.	969-977A	Modeling solid solution strengthening in nickel alloys.	1329-1335A
Nickel, Extraction		Wear characteristics of TiNi shape memory alloys.	1871-1877A
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride.	371-387B	The role of coincidence-site-lattice boundaries in creep of Ni-16Cr-9Fe at 360°C.	2101-2112A
Kinetics of chloridization of nickel-bearing laterite iron ore by hydrogen chloride gas.	389-399B	Neutron diffraction measurements of intergranular strains in Monel-400.	2565-2576A
The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K.	647-650B	A new miniature mechanical testing procedure: application to intermetallics.	2577-2582A
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites.	795-804B		

- Nickel base alloys, Melting**
Arc voltage distribution properties as a function of melting current, electrode gap, and CO pressure during vacuum arc remelting. 841-853B
- Nickel base alloys, Microstructure**
The antiphase boundary energies of L₁₂ ordered Ni_{74.5}Pd_{25.5} alloy. 1092-1095A
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
Microstructure of Ti-48.2 at.% Ni shape memory thin films. 1985-1991A
- Nickel base alloys, Oxidation**
A mechanics-based approach to cyclic oxidation. 411-422A
- Nickel base alloys, Phase transformations**
Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. 537-544A
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
Shock-induced martensitic transformations in near-equiatomic NiTi alloys. 1445-1455A
Discontinuous cellular precipitation in a high-refractory nickel-base superalloy. 2443-2452A
- Nickel base alloys, Phases (state of matter)**
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al. 2183-2188A
- Nickel base alloys, Powder technology**
Microprecipitation synthesis of tough NiAl alloys. 905-918B
Amorphization reaction of Ni-Ta powders during mechanical alloying. 1429-1435A
Supersolidus liquid-phase sintering of prealloyed powders. 1553-1567A
- Nickel base alloys, Structural hardening**
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
- Nickel base alloys, Thermal properties**
Enthalpies of formation of liquid binary (copper-iron, cobalt, and nickel) alloys. 1119-1130B
- Nickel chromium molybdenum steels, Mechanical properties**
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
Quasi-steady-state creep crack growth in a 3.5NiCrMoV steel. 629-635A
- Nickel chromium molybdenum steels, Structural hardening**
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels. 621-627A
- Nickel chromium steels, Thermal properties**
Calculation of solidification-related thermophysical properties for steels. 281-297B
- Nickel compounds, Composite materials**
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
Particle penetration during spray forming and Co injection of Ni₃Al-B/Al₂O₃ intermetallic matrix composite. 877-897B
Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route. 1069-1077A
Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
Dislocations in continuous filament reinforced W/NiAl and Al₂O₃/NiAl composites. 2755-2761A
- Nickel compounds, Crystal growth**
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
- Nickel compounds, Mechanical properties**
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
Crystallographic study of fatigue cracking in Ni₃Al(CrB) single crystal. 665-672A
Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys. 795-807A
Fracture toughness of polycrystalline NiAl from finite-element analysis of miniaturized disk-bend test results. 991-996A
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
Fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
Wear characteristics of TiNi shape memory alloys. 1871-1877A
A new miniature mechanical testing procedure: application to intermetallics. 2577-2582A
- Nickel compounds, Microstructure**
The antiphase boundary energies of L₁₂ ordered Ni_{74.5}Pd_{25.5} alloy. 1092-1095A
- Nickel compounds, Phase transformations**
Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. 537-544A
- Shock-induced martensitic transformations in near-equiatomic NiTi alloys.** 1445-1455A
- Nickel compounds, Powder technology**
Microprecipitation synthesis of tough NiAl alloys. 905-918B
- Nickel compounds, Reactions (chemical)**
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
- Nickel compounds, Reduction (chemical)**
Effect of Pd, Cu, and Ni additions on the kinetics of NiCl₂ reduction by hydrogen. 1241-1248B
- Nickel compounds, Thermal properties**
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al. 2183-2188A
- Nickel iron, Mechanical properties**
Correlation of microstructure and thermal fatigue property of three work rolls. 2595-2608A
- Nickel mattes, Reactions (chemical)**
Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag. 429-438B
- Nickel ores, Reduction (chemical)**
The leaching of nickeliferous laterite with ferric chloride. 995-1000B
- Niobium, Alloying additive**
Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
Retained austenite characteristics in thermomechanically processed Si-Mn transformation-induced plasticity steels. 2405-2414A
- Niobium, Alloying elements**
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Niobium, Extraction**
Kinetics of chlorination of niobium pentoxide by carbon tetrachloride. 39-45B
- Niobium, Mechanical properties**
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium. 2297-2307A
- Niobium, Recovering**
Kinetics of chlorination and carbochlorination of pure tantalum and niobium pentoxides. 223-233B
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
- Niobium, Refining**
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- Niobium base alloys, Mechanical properties**
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
Fatigue crack growth through alloyed niobium, Nb-Cr₂Nb, and Nb-Nb₅Si₃ in situ composites. 1297-1314A
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
Fatigue crack growth behavior in niobium-hydrogen alloys. 2059-2065A
- Niobium compounds, Mechanical properties**
An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Niobium compounds, Reactions (chemical)**
Kinetics of chlorination of niobium pentoxide by carbon tetrachloride. 39-45B
- Nitrides, Crystal growth**
Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy. 63-77A
Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
- Nitriding**
Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy. 63-77A
X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation. 851-857A
- Nitriding, Diffusion effects**
Reaction diffusion and phase equilibria in the V-N system. 837-842A

- Nitrogen, Alloying additive**
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
Effect of carbon and nitrogen on chemical homogeneity of fcc iron-based alloys. 2195-2199A
- Nitrogen, Alloying elements**
Effect of the Ti/N ratio on the hardenability and mechanical properties of a quenched-and-tempered C-Mn-B steel. 2027-2035A
- Nitrogen, Diffusion**
Reaction diffusion and phase equilibria in the V-N system. 837-842A
- Nitrogen, Environment**
Oxidation of low carbon steel in multicomponent gases. I. Reduction mechanisms during isothermal oxidation. 1633-1641A
Oxidation of low carbon steel in multicomponent gases. II. Reaction mechanisms during reheating. 1643-1651A
- Nitrogen, Reactions (chemical)**
Kinetic studies on the dissolution of nitrogen in CaO-Al₂O₃, CaO-SiO₂, and CaO-CaF₂ melts. 633-638B
- Nitrogen, Ternary systems**
Nitridation of Ti-Al alloys: a thermodynamic approach. 1949-1951A
- Nodular iron, Irradiation**
Surface hardening of a ductile-cast iron roll using high-energy electron beams. 1499-1508A
- Nodular iron, Mechanical properties**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
Tensile properties of a thermomechanically processed ductile iron. 1213-1218A
Influence of microstructure on fracture toughness of austempered ductile iron. 1457-1470A
Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling. 2245-2254A
Damage effect on the fracture toughness of nodular cast iron. II. Damage zone characterization ahead of a crack tip. 2255-2262A
- Nodular iron, Phase transformations**
The role of manganese and copper in the eutectoid transformation of spheroidal graphite cast iron. 2015-2025A
Bainitic transformation in austempered ductile iron with reference to untransformed austenite volume phenomenon. 2159-2162A
- Nonferrous castings, Crystal growth**
Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
- Nonferrous castings, Mechanical properties**
Corrosion fatigue crack growth behavior of a squeeze-cast Al-Si-Mg-Cu alloy with different precrack histories. 1471-1477A
Effects of squeeze casting on the properties of Zn-Bi monotectic alloy. 1509-1515A
- Nonferrous castings, Microstructure**
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
- Nonmetallic inclusions**
Study of inclusions in a failed aero-engine component. 1281-1288A
- Nonmetallic inclusions, Reactions (chemical)**
Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Notch sensitivity, Coating effects**
Role of cladding in the notched tensile properties of a titanium matrix composite. 2731-2740A
- Nuclear fuels, Recovering**
Thermodynamics of mixed oxide compounds, Li₂O-Ln₂O₃ (Ln=Nd or Ce). 1103-1110B
- Nuclear fusion reactors, Materials selection**
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Nuclear reactor components, Corrosion**
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Nuclear reactor components, Irradiation**
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Nuclear reactor components, Materials selection**
Performance of molybdenum with UF₄ at high temperatures as a wall material for space reactors. 2123-2128A
- Nuclear reactor components, Materials substitution**
Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
- Nuclear reactor components, Mechanical properties**
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
An overview of the principles of modeling Charpy impact energy data using statistical analyses. 2609-2623A
- Nucleation**
Simulation of recrystallization microstructures and textures: effects of preferential growth. 15-25A
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
Primary particle melting rates and equiaxed grain nucleation. 169-173B
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
Competitive formation of inter- and intragranularly nucleated ferrite. 2005-2013A
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium. 2297-2307A
- Nucleation, Cooling effects**
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
- Nucleation, Impurity effects**
Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy. 649-654A
- Numerical analysis**
Effect of elastic stress on two-phase binary diffusion couples. 27-38A
Diffusion fields associated with size and shape coarsening of oblate spheroids. 39-50A
Ultrasonic backscattering in duplex microstructures: theory and application to titanium alloys. 91-104A
- Offshore structures, Materials selection**
Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Oil quenching**
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
- Optical measurements**
Evaluation of six κ - ϵ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Optical microscopy**
Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
Friction and abrasion resistance of cast aluminum alloy-fly ash composites. 245-250A
The Ce-Mg-Y system. 265-276A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
Hydrogen embrittlement of Ni-Cr-Fe alloys. 655-663A
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
Tensile properties of a thermomechanically processed ductile iron. 1213-1218A
- Order disorder, Heating effects**
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
- Ores, Reduction (chemical)**
Metal extraction from ores by heap leaching. 529-545B
- Orientation relationships**
Analysis of orientation clustering in a directionally solidified nickel-based ingot. 229-236A
Crystallographic study of fatigue cracking in Ni₃Al(CrB) single crystal. 665-672A
Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals. 785-793A

- Interfaces in MoSi₂-SiC in situ composites synthesized by melt processing. 1901-1911A
R values of fiber-textured tantalum plates. 2085-2088A
Plate-shaped transformation products in zirconium-base alloys. 2201-2216A
- Orientation relationships, Deformation effects**
Microtexture and grain boundary evolution during microstructural refinement processes in Supral 2004. 1879-1887A
- Orthorhombic lattice**
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Overaging, Alloying effects**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Oxidation rate, Heating effects**
Oxidation of low carbon steel in multicomponent gases. I. Reduction mechanisms during isothermal oxidation. 1633-1641A
Oxidation of low carbon steel in multicomponent gases. II. Reaction mechanisms during reheating. 1643-1651A
- Oxidation rate, Size effects**
Multiphase oxidation of metals. 209-214B
- Oxidation rate, Temperature effects**
Kinetics of hydrothermal oxidation of granular Pb metal to PbO powder in sodium hydroxide solutions. 33-37B
- Oxidation resistance, Coating effects**
A mechanics-based approach to cyclic oxidation. 411-422A
- Oxide coatings, Mechanical properties**
A mechanics-based approach to cyclic oxidation. 411-422A
- Oxides**
Phase equilibria in the titanium-oxygen system. 447-453B
- Oxides, Electrical properties**
A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides. 1141-1149B
- Oxides, Phases (state of matter)**
Crystal structure determination by high resolution electron microscopy for (Sr_{0.89}Nd_{0.14})₃Cu₂O₅ intergrown with infinite-layer compound. 1111-1114A
- Oxides, Powder technology**
Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Oxides, Reactions (chemical)**
Kinetics of chlorination of niobium pentoxide by carbon tetrachloride. 39-45B
Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the CrO-Cr₂O₃-SiO₂-CaO system. 235-242B
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
Activity-composition relations of MnO in MnO-CrO_x-CaO-SiO₂-containing melts. 619-624B
- Oxides, Reduction (chemical)**
Kinetics of reduction of MnO in powder mixtures with carbon. Influence of ultrasound in ammoniacal leaching of a copper oxide ore. 307-319B
721-723B
- Oxides, Solubility**
Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and CaO_{satd}-B₂O₃ slags. 1257-1259B
- Oxides, Synthesis**
Kinetics of hydrothermal oxidation of granular Pb metal to PbO powder in sodium hydroxide solutions. 33-37B
Preparation of fine ceria powders by hydrolysis of cerium(IV) carboxylate solutions. 959-961B
- Oxides, Trace elements**
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Oxygen, Binary systems**
Phase equilibria in the titanium-oxygen system. 447-453B
- Oxygen, Environment**
Multiphase oxidation of metals. 209-214B
- Oxygen, Impurities**
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- Oxygen, Quaternary systems**
An assessment of the Ca-Fe-O-Si system. 577-596B
- Oxygen, Reactions (chemical)**
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
Surface tension and wettability studies of liquid Fe-Ni-O alloys. 465-472B
Thermodynamics of calcium and oxygen in molten Ti₃Al. 956-959B
Deoxidation equilibria of calcium and magnesium in liquid iron. 1131-1139B
- Oxygen, Ternary systems**
An assessment of the Fe-O-Si system. 563-576B
- Pachucas**
The modeling of low phenomena in air-agitated Pachuka tanks. 727-732B
- Packaging, Bonding**
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Packed beds**
Nonwetting flow of a liquid through a packed bed with gas cross-flow. 597-604B
- Palladium, Dopants**
The antiphase boundary energies of L1₂ ordered Ni_{74.5}Pd_{25.5} alloy. 1092-1095A
Effect of Pd, Cu, and Ni additions on the kinetics of NiCl₂ reduction by hydrogen. 1241-1248B
- Partial pressure**
Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and CaO_{satd}-B₂O₃ slags. 1257-1259B
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al. 2183-2188A
- Particle shape, Alloying effects**
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
- Particle size**
Effect of copper addition on consolidating Ti₃Si₃ by the elemental powder-metallurgical method. 223-228A
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
In situ ceramic particle-reinforced aluminum matrix composites fabricated by reaction pressing in the TiO₂(Ti)-Al-B (B₂O₃) systems. 1931-1942A
- Particle size, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
- Particle size, Composition effects**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
- Particle size, Heating effects**
Microstructure and mechanical properties of sputter-deposited Cu_{1-x}Ta_x alloys. 917-925A
Analysis of grain growth in a two-phase gamma titanium aluminum alloy. 947-954A
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
- Particle size, Welding effects**
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Particle size distribution**
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
In situ ceramic particle-reinforced aluminum matrix composites fabricated by reaction pressing in the TiO₂(Ti)-Al-B (B₂O₃) systems. 1931-1942A
- Particle size distribution, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
- Particle size distribution, Composition effects**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
- Particle size distribution, Cooling effects**
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al₂O₃. 867-874A
- Particle size distribution, Deformation effects**
On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. 257-263A
- Particle size distribution, Heating effects**
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
- Particle size distribution, Welding effects**
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A

- Particulate composites, Brazing**
Interfacial characteristics for brazing of aluminum matrix composites with Al-12Si filler metals. 2673-2682A
- Particulate composites, Casting**
On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
Particle penetration during spray forming and Co injection of $\text{Ni}_3\text{Al}+\text{B}/\text{Al}_2\text{O}_3$ intermetallic matrix composite. 877-897B
- Particulate composites, Crystal growth**
On the precipitation of TiC in liquid iron by reactions between different phases. 471-483A
Modeling of solidification of metal-matrix particulate composites with convection. 1165-1183B
- Particulate composites, Directional solidification**
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 . 867-874A
- Particulate composites, Mechanical properties**
Friction and abrasion resistance of cast aluminum alloy—fly ash composites. 245-250A
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
Tribological properties of aluminum alloy matrix TiB_2 composite prepared by in situ processing. 491-502A
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
Investigation of thermal residual stresses in the layered composite using the finite element method and x-ray diffraction. 969-978B
Interfacial bonding in spray-formed metal matrix composites. 1095-1098A
An examination of creep data for an Al-Mg composite. 1271-1273A
Wear behavior of as-cast $\text{ZnAl}27/\text{SiC}$ particulate metal-matrix composites under lubricated sliding condition. 1951-1955A
Microfracture behavior of Al-SiC composites under dynamic loading. 2162-2170A
Ductile-phase toughening in V-V₅Si in situ composites. 2555-2564A
Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite. 2741-2753A
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings. 2773-2779A
On the creep strengthening of SiC particulates in SiC-Al composites. 2780-2782A
- Particulate composites, Microstructure**
Interfaces in MoSi_2 -SiC in situ composites synthesized by melt processing. 1901-1911A
- Particulate composites, Powder technology**
Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite. 1261-1269A
Solidification paths and carbide morphologies in melt-processed MoSi_2 -SiC in situ composites. 1889-1900A
In situ ceramic particle-reinforced aluminum matrix composites fabricated by reaction pressing in the $\text{TiO}_2(\text{Ti})$ -Al-B (B_2O_3) systems. 1931-1942A
The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates. 2625-2636A
- Particulate composites, Welding**
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Passivation, Alloying effects**
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys. 1219-1222A
- Passivity, Alloying effects**
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys. 1219-1222A
- Pearlite**
Authors' reply to "The effect of the thermal path to reach isothermal temperature on transformation kinetics" by Dr. I.A. Wierszykowski. 1098A
- Percolation**
Nonwetting flow of a liquid through a packed bed with gas cross-flow. 597-604B
- Percolation leaching**
Metal extraction from ores by heap leaching. 529-545B
- Peritectic reactions**
The occurrence and periodicity of oscillating peritectic microstructures developed during directional solidification. 1543-1552A
- Petroleum refining**
Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels. 1607-1616A
- Phase boundary**
General existence of ledges on α_1 plates in Cu-Zn-Al alloys. 1617-1623A
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni_3Al . 2183-2188A
- Phase boundary, Diffusion**
Effect of elastic stress on two-phase binary diffusion couples. 27-38A
- Phase decomposition**
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- Phase decomposition, Alloying effects**
The role of manganese and copper in the eutectoid transformation of spheroidal graphite cast iron. 2015-2025A
- Phase decomposition, Cooling effects**
Building a continuous cooling transformation diagram of β -CEZ alloy by metallography and electrical resistivity measurements. 2467-2475A
- Phase decomposition, Heating effects**
Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. 545-561A
- Phase decomposition, Temperature effects**
Identification and range quantification of steel transformation products by transformation kinetics. 5-14A
- Phase diagram reactions**
Primary particle melting rates and equiaxed grain nucleation. 169-173B
On the rule of additivity in phase transformation kinetics. 287-291A
Phase reaction and diffusion path of the SiC/Ti system. 1385-1390A
- Phase diagrams**
Primary particle melting rates and equiaxed grain nucleation. 169-173B
Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the $\text{CrO-Cr}_2\text{O}_3\text{-SiO}_2\text{-CaO}$ system. 235-242B
The Ce-Mg-Y system. 265-276A
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. 537-544A
An assessment of the Fe-O-Si system. 563-576B
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
Reaction diffusion and phase equilibria in the V-N system. 837-842A
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution. 909-915A
Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts. 969-977A
Thermodynamic optimization of the systems PbO-SiO_2 , PbO-ZnO , ZnO-SiO_2 and PbO-ZnO-SiO_2 . 1011-1018B
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
Tensile properties of a thermomechanically processed ductile iron. 1213-1218A
A thermodynamic description of the Al-Mg-Zn system. 1725-1734A
Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
Solidification paths and carbide morphologies in melt-processed MoSi_2 -SiC in situ composites. 1889-1900A
Nitridation of Ti-Al alloys: a thermodynamic approach. 1949-1951A
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni_3Al . 2183-2188A
- Phase ratio**
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum. 611-620A
- Phase separation, Cooling effects**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 . 867-874A
- Phase stability**
Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
Phase equilibria in the titanium-oxygen system. 447-453B
Studies on the thermodynamic stability of silver selenide. 519-522B

Phase stability, Cooling effects Solidification of undercooled Fe-Cr-Ni alloys. III. Phase selection in chill casting.	2385-2395A	Plasticity, Heating effects Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy.	1809-1814A
Phase stability, Heating effects Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy.	125-133B 149-159B	Plasticity, High temperature effects An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy.	885-893A
Phase stability, Microstructural effects Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys.	527-536A	Plasticity, Microstructural effects Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron.	504-509A 1143-1158A
Phosphorus, Diffusion Effect of phosphorus surface segregation on iron-zinc reaction kinetics during hot-dip galvanizing.	2695-2703A	Plating bath wastes Recovery of copper through decontamination of synthetic solutions using modified barks.	13-23B
Phosphorus, Impurities Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy.	649-654A	Plating baths Recovery of copper through decontamination of synthetic solutions using modified barks.	13-23B
Phosphorus, Reactions (chemical) Thermodynamics of phosphorus in molten Si-Fe and Si-Mn alloys.	1151-1155B	Platinum, Reactions (chemical) Thermodynamics of iron oxide in Fe ₂ O ₃ -dilute CaO+Al ₂ O ₃ +Fe ₂ O ₃ fluxes at 1873K. Thermodynamic properties of solid Pt-Mn, Pt-Cr, and Pt-Mn-Cr alloys at 1500°C.	243-250B 547-552B
Pig iron, Refining Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal.	47-57B	Platinum, Refining Solubility of platinum in molten fluxes as a measure of basicity.	103-108B
Pipe, Microstructure Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels.	1607-1616A	Platinum base alloys, Reactions (chemical) Thermodynamic properties of solid Pt-Mn, Pt-Cr, and Pt-Mn-Cr alloys at 1500°C.	547-552B
Piston rings, Mechanical properties Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings.	2773-2779A	Poissons ratio Damage effect on the fracture toughness of nodular cast iron. I. Damage characterization and plastic flow stress modeling.	2245-2254A
Plasma processing Reduction of ilmenite in a nonequilibrium hydrogen plasma. Reduction of titanium dioxide in a nonequilibrium hydrogen plasma.	517-519B 1069-1080B	Pole figures Study of the β - α phase transformations of a Ti-64 sheet induced from a high-temperature β state and a high-temperature α - β state. Modelling the mechanical behavior of tantalum. Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. Analysis of orientation clustering in a directionally solidified nickel-based ingot. A study on the subgrain superplasticity of extruded Al-Al ₃ Ni eutectic alloy. Improvement of properties of BSCCO superconductor tapes with thermal processing. Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy. Plate-shaped transformation products in zirconium-base alloys. Evolution of recrystallization texture from aluminum sheet cold rolled under unlubricated condition. Modeling of rolling texture development in a ferritic chromium steel. Ductile-phase toughening in V-V ₃ Si in situ composites. Processing of AA3004 alloy can stock for optimum strength and formability.	51-61A 113-122A 135-147A 207-213A 229-236A 401-409A 425-428B 1399-1415A 2201-2216A 2217-2222A 2343-2351A 2555-2564A 2715-2721A
Plastic deformation Modelling the mechanical behavior of tantalum. On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K. Evolution of recrystallization texture from aluminum sheet cold rolled under unlubricated condition. Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions. Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. Modeling of rolling texture development in a ferritic chromium steel. Experimental evaluation of a polycrystal deformation modeling scheme using neutron diffraction measurements.	113-122A 257-263A 595-609A 2217-2222A 2233-2244A 2309-2321A 2343-2351A 2537-2541A	Pollution abatement Recovery of copper through decontamination of synthetic solutions using modified barks.	13-23B
Plastic deformation, Diffusion effects X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation.	851-857A	Polycrystals, Mechanical properties Numerical simulation of the x-ray stress analysis technique in polycrystalline materials under elastic loading. Experimental evaluation of a polycrystal deformation modeling scheme using neutron diffraction measurements.	2515-2525A 2537-2541A
Plastic deformation, Heating effects Deformation, fracture, and mechanical properties of low-temperature tempered martensite in SAE 43xx steels. Deformation and fracture behavior of two Al-Mg-Si alloys.	377-387A 1489-1497A	Porosity The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified Li ₂ titanium trialuminide. Superplastic behavior of spray-deposited 5083 Al.	179-186A 1059-1068A
Plastic deformation, Microstructural effects Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. A study on the subgrain superplasticity of extruded Al-Al ₃ Ni eutectic alloy.	135-147A 401-409A	Porosity, Alloying effects Effect of copper addition on consolidating Ti ₆ Si ₃ by the elemental powder-metallurgical method.	223-228A
Plastic deformation, Stress effects Plastic deformation of hafnium under uniaxial compression. Neutron diffraction measurements of intergranular strains in Monel-400.	1479-1487A 2565-2576A	Porosity, Cooling effects Convection and channel formation in solidifying Pb-Sn alloys.	859-866A
Plastic deformation, Temperature effects A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process.	1213-1225B	Porosity, Heating effects A study on the improvement of the sintered density of W-Ni-Mn heavy alloy.	835-839B
Plastic flow Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy.	171-178A 2309-2321A	Potassium compounds, Reactions (chemical) Prediction on thermodynamic properties of ternary molten salts from Wilson equation.	725-727B
Plastic flow, High temperature effects An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy.	885-893A	Powder coating Analysis of the laser-cladding process for stellite on steel.	501-508B
Plastic flow, Microstructural effects Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel.	504-509A		
Plasticity Modelling the mechanical behavior of tantalum.	113-122A		

Powder compacts, Heat treatment

Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior.

895-904A

Powder metallurgy

Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying.

299-306B

A numerical investigation of gas flow effects on high-pressure gas atomization due to melt tip geometry variation.

935-941B

The evolution of solutions: a thermodynamic analysis of mechanical alloying.

2189-2194A

Direct consolidation of γ -TiAl-Mn-Mo from elemental powder mixtures and control of porosity through a basic study of powder reactions.

2723-2729A

Powder metallurgy parts, Crystal growth

Solidification paths and carbide morphologies in melt-processed MoSi_2 -SiC in situ composites.

1889-1900A

Powder metallurgy parts, Mechanical properties

Microalloyed synthesis of tough NiAl alloys.

905-918B

Superplastic behavior of spray-deposited 5083 Al.

1059-1068A

Microstructure and mechanical behavior of the NiAl-TiC in situ composite.

1079-1087A

Microfracture behavior of Al-SiC composites under dynamic loading.

2162-2170A

The effect of processing on the hot workability of Ti-48Al-2Nb-2Cr alloys.

2543-2553A

The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates.

2625-2636A

Powder metallurgy parts, Microstructure

Interfaces in MoSi_2 -SiC in situ composites synthesized by melt processing.

1901-1911A

Powder metallurgy parts, Quality control

A study on the improvement of the sintered density of W-Ni-Mn heavy alloy.

835-839b

Powders, Synthesis

Kinetics of hydrothermal oxidation of granular Pb metal to PbO powder in sodium hydroxide solutions.

33-37B

Precipitates

Room-temperature deformation behavior of directionally solidified multiphase Ni-Fe-Al alloys.

795-807A

Microstructure of second-phase particles in Ti-5Al-4Sn-2Zr-1Mo-0.25Si-1Nd alloy.

1595-1605A

Microstructure of Ti-48.2 at.% Ni shape memory thin films.

1985-1991A

Precipitates, Crystal growth

Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy.

63-77A

Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power.

125-133B

Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy.

149-159B

Kinetics of simultaneous two-phase precipitation in the Fe-C system.

161-168B

Weldability and toughness assessment of Ti-microalloyed offshore steel.

199-206A

Computer simulation of multicomponent diffusion in joints of dissimilar steels.

303-308A

On the precipitation of TiC in liquid iron by reactions between different phases.

471-483A

On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity.

707-719A

The effect of strontium on the Mg_2Si precipitation process in 6201 aluminum alloy.

1289-1295A

In situ studies of precipitate formation in Al-Pb monotectic solidification by x-ray transmission microscopy.

1705-1710A

Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment.

1745-1753A

Precipitation behavior in ultra-low-carbon steels containing titanium and niobium.

1769-1780A

Interphase boundary precipitation in a Ti-1.7 at.% Er alloy.

2485-2497A

Precipitates, Deformation effects

On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy.

257-263A

Precipitates, Diffusion

Diffusion fields associated with size and shape coarsening of oblate spheroids.

39-50A

Precipitates, Heating effects

Influence of various heat treatments on the microstructure of polycrystalline IN738LC.

1993-2003A

Precipitation

Kinetics of simultaneous two-phase precipitation in the Fe-C system.

161-168B

Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.

259-264B

On the precipitation of TiC in liquid iron by reactions between different phases.

471-483A

On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity.

707-719A

X-ray study of phase transformations in martensitic Ni-Al alloys.

1133-1142A

Discontinuous cellular precipitation in a high-refractory nickel-base superalloy.

2443-2452A

Simulation of the precipitation of sigma phase in duplex stainless steels.

2477-2484A

Precipitation, Alloying effects

Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel.

1195-1203A

The effect of strontium on the Mg_2Si precipitation process in 6201 aluminum alloy.

1289-1295A

Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy.

1399-1415A

Precipitation behavior in ultra-low-carbon steels containing titanium and niobium.

1769-1780A

Precipitation, Composition effects

Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.

259-264B

Precipitation, Cooling effects

Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals.

1417-1428A

Precipitation, Diffusion effects

On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity.

707-719A

Precipitation, Heating effects

Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy.

63-77A

Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite.

545-561A

Microstructural evolution during thermomechanical processing of a Ti-Nb interstitial-free steel just below the A_3 temperature.

1437-1443A

Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment.

1745-1753A

Influence of various heat treatments on the microstructure of polycrystalline IN738LC.

1993-2003A

Precipitation, High temperature effects

Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels.

1607-1616A

Precipitation, Impurity effects

Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power.

125-133B

Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy.

149-159B

Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy.

649-654A

Precipitation hardening

Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power.

125-133B

Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy.

149-159B

Processing of AA3004 alloy can stock for optimum strength and formability.

2715-2721A

Precipitation hardening, Alloying effects

Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium.

775-784A

Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy.

1399-1415A

Precipitation hardening, Deformation effects

On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy.

257-263A

Precipitation hardening, Heating effects

Influence of various heat treatments on the microstructure of polycrystalline IN738LC.

1993-2003A

A study of the mechanism of hardness change of Al-Zn-Mg alloy during retrogression reaging treatments by small angle x-ray scattering (SAXS).

2067-2071A

Precipitation hardening alloys, Composite materials

On the transition from pushing to engulfment during directional solidification of the particle-reinforced aluminum-based metal-matrix composite 2014+10 vol.% Al_2O_3 .

867-874A

Precipitation hardening alloys, Heat treatment

Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power.

125-133B

Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy.

149-159B

- Precipitation hardening alloys, Mechanical properties**
Dislocation/particle interactions in β' (NiAl) precipitation strengthened ferritic Fe-19Cr-4Ni-2Al alloy. 1098-1101A
- Precipitation hardening alloys, Structural hardening**
On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. 257-263A
Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy. 1399-1415A
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
A study of the mechanism of hardness change of Al-Zn-Mg alloy during retrogression reaging treatments by small angle x-ray scattering (SAXS). 2067-2071A
- Precipitation hardening steels, Structural hardening**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Precipitation heat treatment**
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
A study of the mechanism of hardness change of Al-Zn-Mg alloy during retrogression reaging treatments by small angle x-ray scattering (SAXS). 2067-2071A
- Precipitation heat treatment, Alloying effects**
Trace element effects on precipitation processes and mechanical properties in an Al-Cu-Li alloy. 1399-1415A
- Preferred orientation, Deformation effects**
A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Pressure casting**
Fabrication of Al_2O_3 -reinforced Ni_3Al composites by a novel in situ route. 1069-1077A
- Pressure castings, Mechanical properties**
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings. 2773-2779A
- Pressure leaching**
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites. 795-804B
- Pressure vessels, Mechanical properties**
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
An overview of the principles of modeling Charpy impact energy data using statistical analyses. 2609-2623A
- Probes**
The shape of bubbles rising near the nozzle exit in molten metal baths. 417-423B
- Probes, Development**
Development of a multineedle electroresistivity probe for measuring bubble characteristics in molten metal baths. 409-416B
- Process control**
Intelligent control of the feeding of aluminum electrolytic cells using neural networks. 215-221B
A study on the improvement of the sintered density of W-Ni-Mn heavy alloy. 835-839b
Arc voltage distribution properties as a function of melting current, electrode gap, and CO pressure during vacuum arc remelting. 841-853B
A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides. 1141-1149B
- Proof stress, Microstructural effects**
Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Protective coatings, Corrosion**
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Protective coatings, Oxidation**
A mechanics-based approach to cyclic oxidation. 411-422A
- Pseudoelasticity, Microstructural effects**
Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy. 2335-2341A
- Purification**
Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
Kinetic studies on the dissolution of nitrogen in $CaO-Al_2O_3$, $CaO-SiO_2$, and $CaO-CaF_2$ melts. 633-638B
Thermodynamic properties of titanium and iron in molten silicon. 861-867B
Preparation of ultra-high-purity copper by anion exchange. 987-993B
Copper removal from carbon-saturated molten iron with Al_2S_3 -FeS flux. 1029-1037B
The kinetics of selenium removal from molten copper by powder injection. 1039-1051B
- Pyrite, Reduction (chemical)**
Object-oriented simulation of hydrometallurgical processes. III. Application to leaching of laterites and pyrites. 795-804B
- Pyrometallurgy**
Kinetics of chlorination of niobium pentoxide by carbon tetrachloride. 39-45B
Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
Copper losses and thermodynamic considerations in copper smelting. 191-200B
Rate control of the flash reduction of zinc calcines. 201-207B
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
Interfacial phenomena in the liquid copper-calcium ferrite slag system. 401-407B
Thermodynamic properties of solid Pt-Mn, Pt-Cr, and Pt-Mn-Cr alloys at 1500°C. 547-552B
Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems. 553-562B
The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K. 647-650B
Kinetics of zinc ferrite formation in the rate deceleration period. 671-677B
Dissolution of hard- α inclusions in liquid titanium alloys. 1001-1010B
Thermodynamic optimization of the systems $PbO-SiO_2$, $PbO-ZnO$, $ZnO-SiO_2$ and $PbO-ZnO-SiO_2$. 1011-1018B
Reaction mechanism on the smelting reduction of iron ore by solid carbon. 1019-1028B
Copper removal from carbon-saturated molten iron with Al_2S_3 -FeS flux. 1029-1037B
The kinetics of selenium removal from molten copper by powder injection. 1039-1051B
- Quantitative metallography**
Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
- Quasicrystalline structure**
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Quaternary systems, Phases (state of matter)**
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
An assessment of the Ca-Fe-O-Si system. 577-596B
- Quenching (cooling)**
The Ce-Mg-Y system. 265-276A
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
- Quinary systems, Phases (state of matter)**
A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Radiation damage, Impurity effects**
On the blister formation in copper alloys due to the helium ion implantation. 755-762A
- Radiation shielding, Materials selection**
Kinetic studies of the reduction of FeO and $FeWO_4$ by hydrogen. 613-618B
- Rapid solidification**
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
Fracture toughness and fatigue crack growth in rapidly quenched Nb-Cr-Ti in situ composites. 1797-1808A
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in $Ti_{70}Ni_{25}$ alloys. 2223-2232A
Interphase boundary precipitation in a Ti-1.7 at.% Er alloy. 2485-2497A
- Reaction kinetics**
The electrochemical behavior of gold in ammoniacal solutions at 75°C. 5-12B
Kinetics of hydrothermal oxidation of granular Pb metal to PbO powder in sodium hydroxide solutions. 33-37B
Kinetics of chlorination of niobium pentoxide by carbon tetrachloride. 39-45B
Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal. 47-57B
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Synergistic extraction of iron(III) at higher concentrations in D2EHPA-TBP mixed solvent systems. 181-189B
Rate control of the flash reduction of zinc calcines. 201-207B
Multiphase oxidation of metals. 209-214B
Kinetics of chlorination and carbochlorination of pure tantalum and niobium pentoxides. 223-233B

- Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the $\text{CrO-Cr}_2\text{O}_3\text{-SiO}_2\text{-CaO}$ system. 235-242B
- An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
- On the rule of additivity in phase transformation kinetics. 287-291A
- Kinetics of reduction of MnO in powder mixtures with carbon. 307-319B
- Discussion of "The adsorption kinetics of dicyanoaurate and dicyanoargentate ions in activated carbon" and reply. 345-350B
- Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
- Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
- Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
- A mechanics-based approach to cyclic oxidation. 411-422A
- Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- On the precipitation of TiC in liquid iron by reactions between different phases. 471-483A
- Reduction of ilmenite in a nonequilibrium hydrogen plasma. 517-519B
- Kinetic studies on the dissolution of nitrogen in $\text{CaO-Al}_2\text{O}_3$, CaO-SiO_2 , and CaO-CaF_2 melts. 633-638B
- Kinetics of zinc ferrite formation in the rate deceleration period. 671-677B
- Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Influence of slag and foam characteristics on reduction of FeO-containing slags by solid carbon. 805-810B
- Minimization of hexavalent chromium in magnesite-chrome refractory. 855-859B
- The leaching kinetics of chalcopirite (CuFeS_2) in ammonium iodide solutions with iodine. 979-985B
- Reaction mechanism on the smelting reduction of iron ore by solid carbon. 1019-1028B
- The kinetics of selenium removal from molten copper by powder injection. 1039-1051B
- Activities in the system cryolite-alumina. 1089-1093B
- X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
- A flame process for synthesis of unagglomerated, low-oxygen nanoparticles: application to Ti and TiB_2 . 1199-1211B
- Solutions of CeO_2 in cryolite melts. 1257B
- Phase reaction and diffusion path of the SiC/Ti system. 1385-1390A
- Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
- The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- Discussion of "An analysis of static recrystallization during continuous, rapid heat treatment" and authors' reply. 2763-2765A
- Reaction kinetics, Alloying effects**
- Discussion of "A study on morphology and plate mean dimensions in Fe-Ni and Fe-Ni-Cr alloys". 721-722A
- Influence of short circuiting on the kinetics and mechanism of iodide film growth on Ag and Cd-doped Ag. 1189-1198B
- Reaction kinetics, Composition effects**
- Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
- Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
- Effect of Pd, Cu, and Ni additions on the kinetics of NiCl_2 reduction by hydrogen. 1241-1248B
- Reaction kinetics, Cooling effects**
- Authors' reply to "The effect of the thermal path to reach isothermal temperature on transformation kinetics" by Dr. I.A. Wierszylowski. 1098A
- Reaction kinetics, Deformation effects**
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Reaction kinetics, Heating effects**
- Oxidation of low carbon steel in multicomponent gases. I. 1633-1641A
- Reduction mechanisms during isothermal oxidation. 1643-1651A
- Oxidation of low carbon steel in multicomponent gases. II. Reaction mechanisms during reheating.
- Reaction kinetics, Microstructural effects**
- Effect of substrate grain size on iron-zinc reaction kinetics during hot-dip galvanizing. 2683-2694A
- Reaction kinetics, Pressure effects**
- On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
- Reaction kinetics, Temperature effects**
- Kinetic studies of the reduction of FeO and FeWO_4 by hydrogen. 613-618B
- Reagents, Materials selection**
- Copper removal from carbon-saturated molten iron with $\text{Al}_2\text{S}_3\text{-FeS}$ flux. 1029-1037B
- Recovery, Microstructural effects**
- A study on the subgrain superplasticity of extruded Al- Al_3Ni eutectic alloy. 401-409A
- Recrystallization**
- On the rule of additivity in phase transformation kinetics. 287-291A
- Grain boundary mobility during recrystallization of copper. 749-754A
- Modeling time dependence of the average interface migration rate in site-saturated recrystallization. 939-946A
- Discussion of "An analysis of static recrystallization during continuous, rapid heat treatment" and authors' reply. 2763-2765A
- Recrystallization, Composition effects**
- Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si. 681-687A
- Recrystallization, Cooling effects**
- The effect of cooling rate from the melt on the recrystallization behavior of aluminum alloy 6013. 2137-2142A
- Recrystallization, Deformation effects**
- Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Evolution of recrystallization texture from aluminum sheet cold rolled under unlubricated condition. 2217-2222A
- Recrystallization, Heating effects**
- Microstructural evolution during thermomechanical processing of a Ti-Nb interstitial-free steel just below the Ar_3 temperature. 1437-1443A
- Recrystallization, Microstructural effects**
- Simulation of recrystallization microstructures and textures: effects of preferential growth. 15-25A
- Reduction of area, Composition effects**
- Hydrogen embrittlement of Ni-Cr-Fe alloys. 655-663A
- Refineries, Materials selection**
- Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels. 1607-1616A
- Research**
- Future steelmaking technologies and the role of basic research. 1963-1973A
- Report from a traveler: "a new silk road". 1975-1983A
- Residual stress**
- Investigation of thermal residual stresses in the layered composite using the finite element method and x-ray diffraction. 969-978B
- Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite. 2741-2753A
- Dislocations in continuous filament reinforced W/NiAl and $\text{Al}_2\text{O}_3\text{/NiAl}$ composites. 2755-2761A
- Residual stress, Deformation effects**
- A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Residual stress, Diffusion effects**
- X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation. 851-857A
- Residual stress, Heating effects**
- Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys. 485-489A
- High-temperature relaxations in aluminum studied by isothermal mechanical spectrometry. 1661-1665A
- Residual stress, Impurity effects**
- A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
- Resistivity**
- Development of a multineedle electroresistivity probe for measuring bubble characteristics in molten metal baths. 409-416B
- The shape of bubbles rising near the nozzle exit in molten metal baths. 417-423B
- A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides. 1141-1149B
- Resistivity, Heating effects**
- Aging effects in a Cu-12Al-5Ni-2Mn-Ti shape memory alloy. 955-967A
- Resistivity, Impurity effects**
- Absorption kinetics and mechanisms of carbon monoxide in liquid niobium. 455-463B
- Resistivity, Microstructural effects**
- The effect of strontium on the Mg_2Si precipitation process in 6201 aluminum alloy. 1289-1295A
- Resonant frequency**
- Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys. 423-434A

- Retained austenite, Alloying effects**
Retained austenite characteristics in thermomechanically processed Si-Mn transformation-induced plasticity steels. 2405-2414A
- Retained austenite, Heating effects**
Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. 545-561A
Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
Influence of microstructure on fracture toughness of austempered ductile iron. 1457-1470A
- Retained austenite, Welding effects**
An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
- Retaining rings, Mechanical properties**
Study of inclusions in a failed aero-engine component. 1281-1288A
- Reverberatory furnaces**
Copper losses and thermodynamic considerations in copper smelting. 191-200B
- Rolling friction**
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- Rolling texture**
Evolution of recrystallization texture from aluminum sheet cold rolled under unlubricated condition. 2217-2222A
Modeling of rolling texture development in a ferritic chromium steel. 2343-2351A
Texture development in dual-phase cold-rolled 18% Ni maraging steel. 2459-2465A
Processing of AA3004 alloy can stock for optimum strength and formability. 2715-2721A
- Rolls, Materials selection**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
- Rolls, Mechanical properties**
A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- Room temperature**
Room-temperature superplasticity in a Zn-0.3 wt.% Al alloy. 1711-1713A
Ductile-phase toughening in V-V₂Si in situ composites. 2555-2564A
Understanding the potential and pH dependency of high-strength β -titanium alloy environmental crack initiation. 2645-2656A
- Rubidium compounds, Reactions (chemical)**
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
- Rutile, Reactions (chemical)**
Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Sand casting**
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
- Sand castings, Mechanical properties**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Scale (corrosion), Coating effects**
A mechanics-based approach to cyclic oxidation. 411-422A
- Scale (corrosion), Heating effects**
Oxidation of low carbon steel in multicomponent gases. II. Reaction mechanisms during reheating. 1643-1651A
- Scanning electron microscopy**
Recovery of copper through decontamination of synthetic solutions using modified barks. 13-23B
Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
Friction and abrasion resistance of cast aluminum alloy-fly ash composites. 245-250A
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
Kinetics of chloridization of nickel oxide with gaseous hydrogen chloride. 371-387B
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
Kinetics of chloridization of nickel-bearing lateritic iron ore by hydrogen chloride gas. 389-399B
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
Hydrogen embrittlement of Ni-Cr-Fe alloys. 655-663A
Crystallographic study of fatigue cracking in Ni₃Al(CrB) single crystal. 665-672A
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
Grain boundary mobility during recrystallization of copper. 749-754A
Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route. 1069-1077A
Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
Interfacial bonding in spray-formed metal matrix composites. 1095-1098A
Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
Tensile properties of a thermomechanically processed ductile iron. 1213-1218A
Study of inclusions in a failed aero-engine component. 1281-1288A
- Screw dislocations, Deformation effects**
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K. 595-609A
- Sea nodules**
Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur. 25-32B
- Secondary hardening**
Latent hardening behavior of monocrystalline Al-Mg solid solution. 2353-2360A
- Secondary hardening, Alloying effects**
Effect of alloying additions on secondary hardening behavior of molybdenum-containing steels. 621-627A
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Secondary ion mass spectroscopy**
Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite. 1251-1259A
- Secondary metals, Recovering**
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag. 429-438B
- Segregations**
Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot. 479-489B
Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
Eutectic reaction and nonconstant material parameters in micro-macroseggregation modeling. 2705-2714A
- Segregations, Coating effects**
Effect of phosphorous surface segregation on iron-zinc reaction kinetics during hot-dip galvanizing. 2695-2703A
- Segregations, Composition effects**
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
- Segregations, Cooling effects**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- Segregations, Crystal growth**
Correlation of microstructure and fracture toughness in three high-speed steel rolls. 123-134A
- Segregations, Diffusion effects**
Minimizing beta flecks in the Ti-17 alloy. 899-903B
- Segregations, Shape effects**
Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots. 943-952B
- Selenides**
Studies on the thermodynamic stability of silver selenide. 519-522B
- Selenium, Binary systems**
Studies on the thermodynamic stability of silver selenide. 519-522B
- Selenium, Impurities**
The kinetics of selenium removal from molten copper by powder injection. 1039-1051B

Selenium, Recovering		
Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag.	429-438B	
Self-propagating synthesis		
Micropyretic synthesis of tough NiAl alloys.	905-918B	
Sensors, Materials substitution		
Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys.	423-434A	
Serrated yielding		
Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel.	171-178A	
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C.	347-361A	
Serrated yielding, Temperature effects		
Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition.	1347-1355A	
Shape		
The shape of bubbles rising near the nozzle exit in molten metal baths.	417-423B	
Shape memory, Alloying effects		
Reduction and removal of martensite stabilization in Cu-Zn-Al-Mn-Zr shape memory alloys.	2765-2767A	
Shape memory, Corrosion effects		
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys.	1219-1222A	
Shape memory, Heating effects		
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy.	955-967A	
X-ray study of phase transformations in martensitic Ni-Al alloys.	1133-1142A	
Shape memory, Microstructural effects		
Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy.	2335-2341A	
Shape memory, Stress effects		
Shock-induced martensitic transformations in near-equiatomic NiTi alloys.	1445-1455A	
Shape memory alloys, Corrosion		
The effect of Mn-depleted surface layer on the corrosion resistance of shape memory Fe-Mn-Si-Cr alloys.	1219-1222A	
Shape memory alloys, Mechanical properties		
Fractal fracture and transformation toughening in CuNiAl single crystal.	1337-1340A	
Wear characteristics of TiNi shape memory alloys.	1871-1877A	
Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy.	2335-2341A	
Shape memory alloys, Phase transformations		
Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys.	537-544A	
Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy.	955-967A	
X-ray study of phase transformations in martensitic Ni-Al alloys.	1133-1142A	
Shock-induced martensitic transformations in near-equiatomic NiTi alloys.	1445-1455A	
Reduction and removal of martensite stabilization in Cu-Zn-Al-Mn-Zr shape memory alloys.	2765-2767A	
Shear strength, High temperature effects		
Strengthening effects in ACBA/Al ₂ O ₃ short-fiber composites as a function of temperature and strain rate.	1859-1869A	
Sheet metal, Diffusion		
Reaction diffusion and phase equilibria in the V-N system.	837-842A	
Sheet metal, Mechanical properties		
A numerical and experimental study of deformation characteristics of the plane strain punch stretching test.	1653-1659A	
Elevated temperature fracture toughness of Al-Cu-Mg-Ag sheet: characterization and modeling.	1815-1829A	
Influence of limit stress states and yield criteria on the prediction of forming limit strains in sheet metals.	2323-2333A	
Sheet metal, Metal working		
Crystallographic analysis of the influence of stress state on earing behavior in deep drawing of face-centered cubic metals.	785-793A	
Sheet metal, Microstructure		
Evolution of recrystallization texture from aluminum sheet cold rolled under unlubricated condition.	2217-2222A	
Shardizing		
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases.	517-525A	
Shock		
Shock-induced martensitic transformations in near-equiatomic NiTi alloys.	1445-1455A	
Shrinkage		
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation.	665-669B	
Sigma phase, Crystal growth		
Simulation of the precipitation of sigma phase in duplex stainless steels.	2477-2484A	
Silicides		
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution.	909-915A	
Silicides, Composite materials		
Solidification paths and carbide morphologies in melt-processed MoSi ₂ -SiC in situ composites.	1889-1900A	
Interfaces in MoSi ₂ -SiC in situ composites synthesized by melt processing.	1901-1911A	
Ductile-phase toughening in V-V ₃ Si in situ composites.	2555-2564A	
Silicides, Crystal growth		
The effect of strontium on the Mg ₂ Si precipitation process in 6201 aluminum alloy.	1289-1295A	
Silicides, Powder technology		
Effect of copper addition on consolidating Ti ₃ Si ₃ by the elemental powder-metallurgical method.	223-228A	
Silicomanganese, Reactions (chemical)		
Thermodynamics of phosphorus in molten Si-Fe and Si-Mn alloys.	1151-1155B	
Silicon, Alloying elements		
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts.	251-258B	
Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.	259-264B	
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron.	325-333A	
Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si.	681-687A	
Silicon, Binary systems		
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution.	909-915A	
Silicon, Composite materials		
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings.	2773-2779A	
Silicon, Crystal growth		
Faceted growth of silicon crystals in Al-Si alloys.	1233-1243A	
Silicon, Melting		
Thermodynamic properties of titanium and iron in molten silicon.	861-867B	
Silicon, Powder technology		
Effect of copper addition on consolidating Ti ₃ Si ₃ by the elemental powder-metallurgical method.	223-228A	
Silicon, Quaternary systems		
An assessment of the Ca-Fe-O-Si system.	577-596B	
Silicon, Reactions (chemical)		
Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal.	47-57B	
Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems.	553-562B	
Silicon, Solubility		
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing.	135-148B	
Silicon, Ternary systems		
An assessment of the Fe-O-Si system.	563-576B	
Silicon, Trace elements		
Microstructural features of cracking in autogenous beryllium weldments.	673-680A	
Silicon carbide, Bonding		
Phase reaction and diffusion path of the SiC/Ti system.	1385-1390A	
Silicon carbide, Composite materials		
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite.	309-323A	
The effect of SiC particle reinforcement on the creep behavior of 2080 aluminum.	611-620A	
Investigation of thermal residual stresses in the layered composite using the finite element method and x-ray diffraction.	969-978B	
Interfacial bonding in spray-formed metal matrix composites.	1095-1098A	
Modeling of solidification of metal-matrix particulate composites with convection.	1165-1183B	
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite.	1261-1269A	
An examination of creep data for an Al-Mg composite.	1271-1273A	

- Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
- Solidification paths and carbide morphologies in melt-processed MoSi_2 -SiC in situ composites. 1889-1900A
- Interfaces in MoSi_2 -SiC in situ composites synthesized by melt processing. 1901-1911A
- Wear behavior of as-cast ZnAl27/SiC particulate metal-matrix composites under lubricated sliding condition. 1951-1955A
- Simulation of crack propagating in discontinuously reinforced metal matrix composite. 2149-2157A
- Microfracture behavior of Al-SiC composites under dynamic loading. 2162-2170A
- An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply $[\text{75}]_4$ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
- The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates. 2625-2636A
- On the creep strengthening of SiC particulates in SiC-Al composites. 2780-2782A
- Silicon dioxide, Physical properties**
Experimental studies of the viscosities in the $\text{CaO-Fe}_2\text{O}_3\text{-SiO}_2$ slags. 827-834B
- Silicon dioxide, Reactions (chemical)**
Dissolution of alumina in mold fluxes. 275-279B
Kinetic studies on the dissolution of nitrogen in $\text{CaO-Al}_2\text{O}_3$, CaO-SiO_2 , and CaO-CaF_2 melts. 633-638B
The effect of silica-containing binders on the titanium/face coat reaction. 919-926B
- Silicon steels, Crystal growth**
Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si. 681-687A
- Silicon steels, Steel making**
Mathematical simulation and experimental verification of melting resulting from the coupled effect of natural convection and exothermic heat of mixing. 135-148B
- Silver, Binary systems**
Thermochemistry of binary alloys of transition metals: the systems Me-Gd, Me-Ho, and Me-Lu (Me=Cu, Ag, and Au). 187-190A
Studies on the thermodynamic stability of silver selenide. 519-522B
- Silver, Corrosion**
Influence of short circuiting on the kinetics and mechanism of iodide film growth on Ag and Cd-doped Ag. 1189-1198B
- Silver, Diffusion**
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Silver, Mechanical properties**
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Silver, Recovering**
Thermodynamic modeling of selenide matte converting. 811-819B
- Silver base alloys, Diffusion**
Diffusional breakdown of nickel protective coatings on copper substrate in silver-copper eutectic melts. 969-977A
- Silver compounds**
Studies on the thermodynamic stability of silver selenide. 519-522B
- Silver compounds, Reactions (chemical)**
Discussion of "The adsorption kinetics of dicyanoaurate and dicyanoargentate ions in activated carbon" and reply. 345-350B
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
- Single crystals, Directional solidification**
Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
- Single crystals, Mechanical properties**
Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
Fractal fracture and transformation toughening in CuNiAl single crystal. 1337-1340A
The role of mass transport in the stress-corrosion cracking mechanism of Cu-25 at.% Au single crystals in chloride solutions. 2361-2369A
- Single crystals, Microstructure**
Microstructure and mechanisms of cyclic deformation of aluminum single crystals at 77K. 595-609A
- Single crystals, Structural hardening**
Latent hardening behavior of monocrystalline Al-Mg solid solution. 2353-2360A
- Sintered compacts, Microstructure**
Effect of copper addition on consolidating Ti_6Si_3 by the elemental powder-metallurgical method. 223-228A
- Sintered compacts, Physical properties**
A study on the improvement of the sintered density of W-Ni-Mn heavy alloy. 835-839b
- Sintering (powder metallurgy), Alloying effects**
Effect of copper addition on consolidating Ti_6Si_3 by the elemental powder-metallurgical method. 223-228A
- Slags**
Copper losses and thermodynamic considerations in copper smelting. 191-200B
- Slags, Physical properties**
Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
Experimental studies of the viscosities in the $\text{CaO-Fe}_2\text{O}_3\text{-SiO}_2$ slags. 827-834B
- Slags, Reactions (chemical)**
Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal. 47-57B
Kinetics of chlorination and carbochlorination of pure tantalum and niobium pentoxides. 223-233B
Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the $\text{CrO-Cr}_2\text{O}_3\text{-SiO}_2\text{-CaO}$ system. 235-242B
Dissolution of alumina in mold fluxes. 275-279B
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag. 420-438B
An assessment of the Fe-O-Si system. 563-576B
An assessment of the Ca-Fe-O-Si system. 577-596B
Influence of slag and foam characteristics on reduction of FeO-containing slags by solid carbon. 805-810B
Thermodynamics of MnO, FeO, and phosphorus in steelmaking slags with high MnO contents. 1111-1118B
Deoxidation equilibria of calcium and magnesium in liquid iron. 1131-1139B
Determination of kinetic parameters using differential thermal analysis—application to the decomposition of CaCO_3 . 1157-1164B
- Slags, Reduction (chemical)**
Reduction kinetics of liquid iron oxide-containing slags by carbon monoxide. 821-826B
- Slags, Solubility**
Dependence of carbon solubility on oxygen partial pressure for 80 mass% BaO-MnO and $\text{CaO}_{\text{sat}}\text{-B}_2\text{O}_3$ slags. 1257-1259B
- Slags, Surface properties**
Interfacial phenomena in the liquid copper-calcium ferrite slag system. 401-407B
- Slags, Thermal properties**
Thermodynamic optimization of the systems PbO-SiO_2 , PbO-ZnO , ZnO-SiO_2 and PbO-ZnO-SiO_2 . 1011-1018B
- Sliding friction**
Tribological properties of aluminum alloy matrix TiB_2 composite prepared by in situ processing. 491-502A
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Sliding friction, Composition effects**
Wear behavior of as-cast ZnAl27/SiC particulate metal-matrix composites under lubricated sliding condition. 1951-1955A
- Slip**
Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- Slip, Composition effects**
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Slip planes**
Crystallographic study of fatigue cracking in $\text{Ni}_3\text{Al}(\text{CrB})$ single crystal. 665-672A
Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A
Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A

- Slip planes, Deformation effects**
Plastic deformation of hafnium under uniaxial compression. 1479-1487A
A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Smelting**
Influence of chromium and nickel on the dissociation of CO₂ on carbon-saturated liquid iron. 639-645B
Thermodynamic optimization of the systems PbO-SiO₂, PbO-ZnO, ZnO-SiO₂ and PbO-ZnO-SiO₂. 1011-1018B
Reaction mechanism on the smelting reduction of iron ore by solid carbon. 1019-1028B
- Smelting furnaces**
Copper losses and thermodynamic considerations in copper smelting. 191-200B
- Sodium chloride, Environment**
Understanding the potential and pH dependency of high-strength β -titanium alloy environmental crack initiation. 2645-2656A
- Sodium compounds, Reactions (chemical)**
Dissolution of alumina in mold fluxes. 275-279B
Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
- Sodium fluoride, Reactions (chemical)**
Thermodynamics of the system NaF-AlF₃. VII. Non-stoichiometric solid cryolite. 1095-1097B
- Sodium hydroxide, Reactions (chemical)**
Kinetics of hydrothermal oxidation of granular Pb metal to PbO powder in sodium hydroxide solutions. 33-37B
- Solar generators, Service life**
Thermodynamic properties of titanium and iron in molten silicon. 861-867B
- Solders, Reactions (chemical)**
Interfacial reactions in molten Sn/Cu and In/Cu couples. 927-934B
- Solid phases**
Calculation of solidification-related thermophysical properties for steels. 281-297B
Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminides. 979-989A
Crystal structure determination by high resolution electron microscopy for (Sr_{0.88}Nd_{0.14})₃Cu₂O₈ intergrown with infinite-layer compound. 1111-1114A
Effects of morphology and volume fraction of α_2 phase on the fatigue crack propagation of a Ti-24Al-11Nb alloy. 2527-2536A
- Solid phases, Composition effects**
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Solid phases, Heating effects**
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
- Solid solubility**
Primary particle melting rates and equiaxed grain nucleation. 169-173B
- Solid solutions**
The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution. 909-915A
- Solidification**
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
Primary particle melting rates and equiaxed grain nucleation. 169-173B
Calculation of solidification-related thermophysical properties for steels. 281-297B
A thermodynamic description for the ternary Al-Mg-Cu system. Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
Modeling of macrosegregation due to thermosolutal convection and contraction-driven flow in direct chill continuous casting of an Al-Cu round ingot. 479-489B
Determination of the solidification curve of a Rene N4 superalloy. 503-504A
Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
The effect of macroscopic solute diffusion in the liquid upon surface macrosegregation. 665-669B
Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
The influence of convection during solidification on fragmentation of the mushy zone of a model alloy. 875-883A
- Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
Modeling of solidification of metal-matrix particulate composites with convection. 1165-1183B
Models for the isothermal coarsening of secondary dendrite arms in multicomponent alloys. 1185-1187B
Faceted growth of silicon crystals in Al-Si alloys. 1233-1243A
Modeling of solidification of molten metal droplet during atomization. 1249-1255B
Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
In situ studies of precipitate formation in Al-Pb monotectic solidification by x-ray transmission microscopy. 1705-1710A
Solidification paths and carbide morphologies in melt-processed MoSi₂-SiC in situ composites. 1889-1900A
Interfaces in MoSi₂-SiC in situ composites synthesized by melt processing. 1901-1911A
Dynamics of solid/liquid interface shape evolution near an insoluble particle—an x-ray transmission microscopy investigation. 2129-2135A
Solidification of undercooled Fe-Cr-Ni alloys. III. Phase selection in chill casting. 2365-2395A
Eutectic reaction and nonconstant material parameters in micro-macroscopic modeling. 2705-2714A
- Solidification, Composition effects**
Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Solidification, Pressure effects**
Solidification of hypereutectic Al-38 wt.% Cu alloy in microgravity and in unit gravity. 1245-1250A
- Solidification, Shape effects**
Thermosolutal convection and macrosegregation during solidification of hypereutectic and hypoeutectic binary alloys in statically cast trapezoidal ingots. 943-952B
- Solids flow**
Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
- Solidus**
Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
- Solubility**
Dissolution of alumina in mold fluxes. 275-279B
The solubility of ZnO and ZnAl₂O₄ in cryolite melts. 1099-1101B
C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C. 2453-2458A
- Solubility, pH effects**
Solubility of platinum in molten fluxes as a measure of basicity. 103-108B
- Solubility, Temperature effects**
Alumina solubility in molten salt systems of interest for aluminum electrolysis and related phase diagram data. 81-86B
- Solutes, Diffusion**
Diffusion fields associated with size and shape coarsening of oblate spheroids. 39-50A
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
Eutectic reaction and nonconstant material parameters in micro-macroscopic modeling. 2705-2714A
- Solution heat treatment**
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite. 1261-1269A
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
Building a continuous cooling transformation diagram of β -CEZ alloy by metallography and electrical resistivity measurements. 2467-2475A
Processing of AA3004 alloy can stock for optimum strength and formability. 2715-2721A
- Solution kinetics**
Identification and range quantification of steel transformation products by transformation kinetics. 5-14A
- Solvents**
Synergistic extraction of iron(III) at higher concentrations in D2EHPA-TBP mixed solvent systems. 181-189B

- Space environment**
Gravitational effects on grain coarsening during liquid-phase sintering. 215-221A
- Spalling**
A mechanics-based approach to cyclic oxidation. 411-422A
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- Specific heat, Microstructural effects**
Calculation of solidification-related thermophysical properties for steels. 281-297B
- Spectral emissivity, Temperature effects**
Discontinuity in normal spectral emissivity of solid and liquid copper at the melting point. 2507-2513A
- Spectroscopy**
Study of inclusions in a failed aero-engine component. 1281-1288A
- Spinel, Reactions (chemical)**
Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Spot welding**
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 687-700B
- Spray forming**
Particle penetration during spray forming and Co injection of Ni₃Al-B/Al₂O₃ intermetallic matrix composite. 877-897B
Superplastic behavior of spray-deposited 5083 Al. 1059-1068A
Microstructure and properties of spray-deposited 2014+15 vol.% SiC particulate-reinforced metal matrix composite. 1261-1269A
Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
- Spring steels, Steel making**
Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Sputtered coatings, Microstructure**
Microstructure and mechanical properties of sputter-deposited Cu_{1-x}Ta_x alloys. 917-925A
- Sputtered films, Microstructure**
Microstructure and mechanical properties of sputter-deposited Cu_{1-x}Ta_x alloys. 917-925A
- Squeeze casting**
Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite. 1251-1259A
Corrosion fatigue crack growth behavior of a squeeze-cast Al-Si-Mg-Cu alloy with different precrack histories. 1471-1477A
Effects of squeeze casting on the properties of Zn-Bi monotectic alloy. 1509-1515A
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings. 2773-2779A
- Stacking faults**
General existence of ledges on α_1 plates in Cu-Zn-Al alloys. 1617-1623A
- Stacking faults, Deformation effects**
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
- Stainless steels, Bonding**
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Stainless steels, Melting**
Influence of chromium and nickel on the dissociation of CO₂ on carbon-saturated liquid iron. 639-645B
- Stainless steels, Phase transformations**
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior. 453-460A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
- Stainless steels, Powder technology**
Supersolidus liquid-phase sintering of prealloyed powders. 1553-1567A
- Stainless steels, Smelting**
Activity-composition relations of MnO in MnO-Cr₂O₃-CaO-SiO₂ containing melts. 619-624B
- Stainless steels, Steel making**
Surface tension and wettability studies of liquid Fe-Ni-O alloys. 465-472B
- Stamping**
A numerical and experimental study of deformation characteristics of the plane strain punch stretching test. 1653-1659A
- Standards**
Estimation of atmospheric corrosion of high-strength, low-alloy steels. 1274-1276A
- Statistical methods**
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
- Steel making**
Effect of FeO in the slag and silicon in the metal on the desulfurization of hot metal. 47-57B
Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
Thermodynamics of iron oxide in Fe₂O₃-dilute CaO-Al₂O₃-Fe₂O fluxes at 1873K. 243-250B
Deoxidation equilibria of calcium and magnesium in liquid iron. 1131-1139B
A high-accuracy, calibration-free technique for measuring the electrical conductivity of molten oxides. 1141-1149B
- Steels, Casting**
Dissolution of alumina in mold fluxes. 275-279B
Evaluation of six k-ε turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Steels, Coating**
Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Steels, Mechanical properties**
Influence of limit stress states and yield criteria on the prediction of forming limit strains in sheet metals. 2323-2333A
- Steels, Microstructure**
Competitive formation of inter- and intragranularly nucleated ferrite. 2005-2013A
- Steels, Phase transformations**
Authors' reply to "The effect of the thermal path to reach isothermal temperature on transformation kinetics" by Dr. I.A. Wierszowski. 1098A
- Steels, Refining**
Thermodynamics of phosphorus in molten Si-Fe and Si-Mn alloys. 1151-1155B
- Steels, Steel making**
Establishment time of liquid flow in a bath agitated by bottom gas injection. 605-612B
Kinetic studies on the dissolution of nitrogen in CaO-Al₂O₃, CaO-SiO₂, and CaO-CaF₂ melts. 633-638B
Minimization of hexavalent chromium in magnesite-chrome refractory. 855-859B
Thermodynamics of MnO, FeO, and phosphorus in steelmaking slags with high MnO contents. 1111-1118B
Future steelmaking technologies and the role of basic research. 1963-1973A
- Stereomicroscopy**
Grain boundary mobility during recrystallization of copper. 749-754A
- Strain**
On the evaluation of efficiency parameters in processing maps. 1581-1582A
- Strain, Impurity effects**
A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
- Strain aging**
Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
- Strain hardening**
Modelling the mechanical behavior of tantalum. 113-122A
Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
Plastic deformation of hafnium under uniaxial compression. 1479-1487A
Deformation and fracture behavior of two Al-Mg-Si alloys. 1489-1497A
Strain hardening regimes and microstructural evolution during large strain compression of low stacking fault energy fcc alloys that form deformation twins. 1781-1795A
Processing of AA3004 alloy can stock for optimum strength and formability. 2715-2721A
- Strain hardening, Deformation effects**
Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- Strain hardening, Heating effects**
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
High-temperature relaxations in aluminum studied by isothermal mechanical spectrometry. 1661-1665A
- Strain hardening, Microstructural effects**
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Strain hardening, Stress effects**
Cyclic deformation behavior of a transformation-induced plasticity-aided dual-phase steel. 2637-2644A
- Strain rate**
Modelling the mechanical behavior of tantalum. 113-122A

- On the evaluation of efficiency parameters in processing maps. Room-temperature superplasticity in a Zn-0.3 wt.% Al alloy. Strengthening effects in AC8A/Al₂O₃ short-fiber composites as a function of temperature and strain rate. High strain rate torsional behavior of an ultrahigh carbon steel (1.8% C-1.6% Al) at elevated temperature. Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. 1581-1582A
1711-1713A
1859-1869A
1913-1920A
2309-2321A
- Strain softening**
On the Gage's stability criterion in processing maps. 2170-2173A
- Strain softening, High temperature effects**
An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Strain softening, Microstructural effects**
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
- Strain softening, Stress effects**
Cyclic deformation behavior of a transformation-induced plasticity-aided dual-phase steel. 2637-2644A
- Stress analysis**
A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
Investigation of thermal residual stresses in the layered composite using the finite element method and x-ray diffraction. 969-978B
Numerical simulation of the x-ray stress analysis technique in polycrystalline materials under elastic loading. 2515-2525A
Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite. 2741-2753A
- Stress corrosion cracking**
Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Stress corrosion cracking, Deformation effects**
Stress corrosion cracking of superplastically formed 7475 aluminum alloy. 2113-2121A
- Stress corrosion cracking, Diffusion effects**
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
- Stress corrosion cracking, Environmental effects**
The role of mass transport in the stress-corrosion cracking mechanism of Cu-25 at.% Au single crystals in chloride solutions. 2361-2369A
- Stress corrosion cracking, Heating effects**
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Stress intensity**
Modeling and microstructure analysis of fatigue initiation life extension by reductions in microporosity. 1157-1167A
- Stress relaxation**
Dislocations in continuous filament reinforced W/NiAl and Al₂O₃/NiAl composites. 2755-2761A
- Stress relaxation, Heating effects**
High-temperature relaxations in aluminum studied by isothermal mechanical spectrometry. 1661-1665A
- Stress strain curves**
Modelling the mechanical behavior of tantalum. 113-122A
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified Li₂ titanium trialuminide. 179-186A
On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. 257-263A
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route. 1069-1077A
- Stress strain curves, Microstructural effects**
Effect of grain size on the observed pseudoelastic behavior of a Cu-Zn-Al shape memory alloy. 2335-2341A
- Strip casting**
A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- Strontium, Alloying additive**
The effect of strontium on the Mg₂Si precipitation process in 6201 aluminum alloy. 1289-1295A
- Strontium compounds, Phases (state of matter)**
Crystal structure determination by high resolution electron microscopy for (Sr_{0.88}Nd_{0.14})₂Cu₂O₈ intergrown with infinite-layer compound. 1111-1114A
- Strontium compounds, Powder technology**
Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Structural steels, Mechanical properties**
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
An overview of the principles of modeling Charpy impact energy data using statistical analyses. 2609-2623A
- Submerged arc welding**
Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
- Sulfides, Smelting**
Copper losses and thermodynamic considerations in copper smelting. 191-200B
- Sulfur, Reactions (chemical)**
Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur. 25-32B
- Sulfur, Ternary systems**
The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K. 647-650B
- Sulfuric acid, Environment**
Room-temperature diffusion in Cu/Ag thin-film couples caused by anodic dissolution. 843-850A
- Superalloys, Brazing**
Effects of applied pressure on the brazing of superplastic Inconel 718 superalloy. 1367-1376A
- Superalloys, Casting**
Determination of the solidification curve of a Rene N4 superalloy. 503-504A
Effect of small amount of nitrogen on carbide characteristics in unidirectional Ni-base superalloy. 2143-2147A
- Superalloys, Claddings**
Analysis of the laser-cladding process for stellite on steel. 501-508B
- Superalloys, Crystal growth**
Computational modeling of NbC/Laves formation in Inconel 718 equiaxed castings. 1582-1587A
- Superalloys, Directional solidification**
Modeling of micro- and macrosegregation and freckle formation in single-crystal nickel-base superalloy directional solidification. 1517-1531A
Motion and remelting of dendrite fragments during directional solidification of a nickel-base superalloy. 1533-1542A
Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy. 1945-1949A
- Superalloys, Mechanical properties**
A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
Effect of phosphorus on the microstructure and stress rupture properties in an Fe-Ni-Cr base superalloy. 649-654A
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
Influence of solid/liquid interfaces on the microstructure and stress-rupture life of the single-crystal nickel-base superalloy NASAIR 100. 997-1009A
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
Modeling solid solution strengthening in nickel alloys. 1329-1335A
Neutron diffraction measurements of intergranular strains in Monel-400. 2565-2576A
- Superalloys, Melting**
Arc voltage distribution properties as a function of melting current, electrode gap, and CO pressure during vacuum arc remelting. 841-853B
- Superalloys, Microstructure**
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Superalloys, Phase transformations**
Discontinuous cellular precipitation in a high-refractory nickel-base superalloy. 2443-2452A
- Superalloys, Phases (state of matter)**
Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni₃Al. 2183-2188A

Superalloys, Structural hardening	
Influence of various heat treatments on the microstructure of polycrystalline IN738LC.	1993-2003A
Superconducting tapes, Powder technology	
Improvement of properties of BSCCO superconductor tapes with thermal processing.	425-428B
Superconductors, Phases (state of matter)	
Crystal structure determination by high resolution electron microscopy for $(\text{Sr}_{0.88}\text{Nd}_{0.12})\text{Cu}_2\text{O}_8$ intergrown with infinite-layer compound.	1111-1114A
Supercooling	
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. I. Theoretical analysis of nucleation behavior.	453-460A
Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments.	461-469A
Solidification of undercooled Fe-Cr-Ni alloys. III. Phase selection in chill casting.	2385-2395A
Superplastic forming	
Microtexture and grain boundary evolution during microstructural refinement processes in Supral 2004.	1879-1887A
Stress corrosion cracking of superplastically formed 7475 aluminum alloy.	2113-2121A
Superplasticity, Microstructural effects	
A study on the subgrain superplasticity of extruded Al-Al ₃ Ni eutectic alloy.	401-409A
Superplasticity, Temperature effects	
Superplastic behavior of spray-deposited 5083 Al.	1059-1068A
Room-temperature superplasticity in a Zn-0.3 wt.% Al alloy.	1711-1713A
Supersaturation	
Kinetics of simultaneous two-phase precipitation in the Fe-C system.	161-168B
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts.	251-258B
Supersaturation, Composition effects	
Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.	259-264B
Surface alloying, Radiation effects	
Phase transitions and microstructure of a laser-induced steel surface alloying.	1699-1703A
Surface chemistry	
Multiphase oxidation of metals.	209-214B
Surface tension and wettability studies of liquid Fe-Ni-O alloys.	465-472B
Kinetics of zinc ferrite formation in the rate deceleration period.	671-677B
Surface energy	
Surface tension and wettability studies of liquid Fe-Ni-O alloys.	465-472B
Surface hardening, Radiation effects	
Surface hardening of a ductile-cast iron roll using high-energy electron beams.	1499-1508A
Surface hardness, Radiation effects	
Microstructural modification of plain carbon steels irradiated by high-energy electron beam.	637-647A
Surface hardening of a ductile-cast iron roll using high-energy electron beams.	1499-1508A
Surface layer, Mechanical properties	
X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation.	851-857A
Surface layer, Phase transformations	
Microstructural modification of plain carbon steels irradiated by high-energy electron beam.	637-647A
Surface hardening of a ductile-cast iron roll using high-energy electron beams.	1499-1508A
Surface structure, Heating effects	
Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting.	1223-1231A
Surface structure, Radiation effects	
Microstructural modification of plain carbon steels irradiated by high-energy electron beam.	637-647A
Surface tension	
Interfacial phenomena in the liquid copper-calcium ferrite slag system.	401-407B
Surface tension and wettability studies of liquid Fe-Ni-O alloys.	465-472B
Tantalum, Alloying elements	
The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys.	1011-1020A
Tantalum, Mechanical properties	
Modelling the mechanical behavior of tantalum.	113-122A
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time.	1831-1842A
R values of fiber-textured tantalum plates.	2085-2088A
Tantalum, Powder technology	
Amorphization reaction of Ni-Ta powders during mechanical alloying.	1429-1435A
Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system.	1569-1580A
Tantalum, Recovering	
Kinetics of chlorination and carbochlorination of pure tantalum and niobium pentoxides.	223-233B
Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination.	359-369B
Tantalum base alloys, Powder technology	
Amorphization reaction of Ni-Ta powders during mechanical alloying.	1429-1435A
Effect of milling temperature on mechanical alloying in the immiscible Cu-Ta system.	1569-1580A
Tarnishing, Alloying effects	
Influence of short circuiting on the kinetics and mechanism of iodide film growth on Ag and Cd-doped Ag.	1189-1198B
Tellurium, Alloying elements	
Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts.	251-258B
Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts.	259-264B
Tellurium, Recovering	
Distribution behavior of cobalt, selenium, and tellurium between nickel-copper-iron matte and silica-saturated iron silicate slag.	429-438B
Temperature	
On the evaluation of efficiency parameters in processing maps.	1581-1582A
Temperature distribution	
A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process.	1213-1225B
Tempering	
Formation of α'' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy.	63-77A
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A
Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite.	545-561A
The effect of the austenitizing heat-treatment variables on the fracture toughness of high-speed steel.	2089-2099A
Tensile properties	
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions.	809-815A
Tensile strength	
Fabrication of Al ₂ O ₃ -reinforced Ni ₃ Al composites by a novel in situ route.	1069-1077A
The effect of consolidation temperature on microstructure and mechanical properties in powder metallurgy-processed 2XXX aluminum alloy composites reinforced with SiC particulates.	2625-2636A
Processing of AA3004 alloy can stock for optimum strength and formability.	2715-2721A
Tensile strength, Coating effects	
Role of cladding in the notched tensile properties of a titanium matrix composite.	2731-2740A
Tensile strength, Composition effects	
Bainitic chromium-tungsten steels with 3% chromium.	335-345A
Hydrogen embrittlement of Ni-Cr-Fe alloys.	655-663A
Tensile strength, Cooling effects	
Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals.	1417-1428A
Tensile strength, Heating effects	
Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels.	377-387A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel.	504-509A
Tensile properties of a thermomechanically processed ductile iron.	1213-1218A
Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy.	1809-1814A
Development of reproducible and increased strength properties in thick extrusions of low-alloy Al-Zn-Mg-Cu based AA 7075.	2429-2433A
Tensile strength, Microstructural effects	
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy.	79-90A
Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite.	309-323A

- Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Isotropic and kinematic hardening in a dispersion-strengthened aluminum alloy. 1205-1211A
- The effect of strontium on the Mg_2Si precipitation process in 6201 aluminum alloy. 1269-1295A
- The influence of martensite on the strength and impact behavior of steel. 2073-2084A
- Tensile strength, Pressure effects**
Effects of squeeze casting on the properties of Zn-Bi monotectic alloy. 1509-1515A
- Tensile strength, Temperature effects**
Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition. 1347-1355A
- Tensile stress**
Shock-induced martensitic transformations in near-equiatomic NiTi alloys. 1445-1455A
- Tension tests**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
- Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
- A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
- An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Ternary systems, Phases (state of matter)**
The Ce-Mg-Y system. 265-276A
- A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
- A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- An assessment of the Fe-O-Si system. 563-576B
- The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K. 647-650B
- A thermodynamic description of the Al-Mg-Zn system. 1725-1734A
- Nitridation of Ti-Al alloys: a thermodynamic approach. 1949-1951A
- Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply. 2433-2435A
- C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C. 2453-2458A
- Tetragonal lattice**
Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Texture**
Simulation of recrystallization microstructures and textures: effects of preferential growth. 15-25A
- A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A
- R values of fiber-textured tantalum plates. 2085-2088A
- Texture, Composition effects**
Effect of silicon content and carbon addition on primary recrystallization of Fe-3% Si. 681-687A
- Texture, Cooling effects**
Improvement of properties of BSCCO superconductor tapes with thermal processing. 425-428B
- Texture, Deformation effects**
Modelling the mechanical behavior of tantalum. 113-122A
- A variant selection model for predicting the transformation texture of deformed austenite. 1755-1768A
- Microtexture and grain boundary evolution during microstructural refinement processes in Supral 2004. 1879-1887A
- Texture, Heating effects**
Study of the β - α phase transformations of a Ti-64 sheet induced from a high-temperature β state and a high-temperature α - β state. 51-61A
- Thallium, Impurities**
The behavior of thallium during jarosite precipitation. 765-776B
- Thermal analysis**
Numerical simulation and Fourier thermal analysis of solidification kinetics in high-carbon Fe-C alloys. 115-123B
- Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
- Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
- Kinetics of simultaneous two-phase precipitation in the Fe-C system. 161-168B
- Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
- Thermal conductivity, Composition effects**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Thermal conductivity, Microstructural effects**
Calculation of solidification-related thermophysical properties for steels. 281-297B
- Thermal cycling**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- A mechanics-based approach to cyclic oxidation. 411-422A
- Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys. 485-489A
- Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy. 1809-1814A
- Thermal fatigue**
Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy. 1809-1814A
- Thermal fatigue, Composition effects**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Thermal fatigue, Microstructural effects**
Correlation of microstructure and thermal fatigue property of three work rolls. 2595-2608A
- Thermal stresses**
A mechanics-based approach to cyclic oxidation. 411-422A
- Investigation of thermal residual stresses in the layered composite using the finite element method and x-ray diffraction. 969-978B
- Thermal stresses, Composition effects**
High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Thermal stresses, Heating effects**
Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys. 485-489A
- Thermodynamics**
Effect of elastic stress on two-phase binary diffusion couples. 27-38A
- Critical evaluation and optimization of the thermodynamic properties and phase diagrams of the CrO-Cr₂O₃-SiO₂-CaO system. 235-242B
- Reduction of molybdenite with carbon in the presence of lime. 265-274B
- Kinetics of reduction of MnO in powder mixtures with carbon. 307-319B
- A thermodynamic description for the ternary Al-Mg-Cu system. 435-446A
- A new generation solution model for predicting thermodynamic properties of a multicomponent system from binaries. 439-445B
- Effects of liquidus and solidus curvature in solidification modeling of binary systems with constant partition ratio. 447-451A
- Characterization of the flow in the molten metal sump during direct chill aluminum casting. 491-499B
- Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. 537-544A
- Thermodynamic properties of solid Pt-Mn, Pt-Cr, and Pt-Mn-Cr alloys at 1500°C. 547-552B
- Evaluation of unified interaction parameter model parameters for calculating activities of ferromanganese alloys: Mn-Fe-C, Mn-Fe-Si, and Mn-Fe-C-Si systems. 553-562B
- An assessment of the Fe-O-Si system. 563-576B
- An assessment of the Ca-Fe-O-Si system. 577-596B
- The liquidus surface and tie-lines in the iron-cobalt-sulfur system between 1473 and 1623K. 647-650B
- Wall-to-bed heat transfer in a circulating fluidized bed for the reduction of iron ore particles. 713-720B
- Prediction on thermodynamic properties of ternary molten salts from Wilson equation. 725-727B
- Thermodynamic modeling of selenide matte converting. 811-819B
- Minimization of hexavalent chromium in magnesite-chrome refractory. 855-859B
- Thermodynamic properties of titanium and iron in molten silicon. 861-867B
- The polynomial representation of thermodynamic properties in dilute solutions. 869-876B
- The activity of cobalt and silicon in the Co-Si system with special focus on the α -Co solid solution. 909-915A
- Thermodynamics on the formation of spinel nonmetallic inclusion in liquid steel. 953-956B
- Thermodynamics of calcium and oxygen in molten Ti₃Al. 956-959B
- Thermodynamic optimization of the systems PbO-SiO₂, PbO-ZnO, ZnO-SiO₂ and PbO-ZnO-SiO₂. 1011-1018B
- The kinetics of selenium removal from molten copper by powder injection. 1039-1051B
- Detailed assessment of integral thermodynamic quantities of liquid Bi-Sn alloy solution system. 1081-1087B
- Thermodynamics of the system NaF-AlF₃. VII. Non-stoichiometric solid cryolite. 1095-1097B
- Thermodynamics of mixed oxide compounds, Li₂O-Ln₂O₃ (Ln=Nd or Ce). 1103-1110B
- Thermodynamics of MnO, FeO, and phosphorus in steelmaking slags with high MnO contents. 1111-1118B

- Thermodynamics of phosphorus in molten Si-Fe and Si-Mn alloys. 1151-1155B
- Solutions of CeO_2 in cryolite melts. 1257B
- The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- A thermodynamic description of the Al-Mg-Zn system. 1725-1734A
- A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Solidification paths and carbide morphologies in melt-processed MoSi_2 -SiC in situ composites. 1889-1900A
- Nitridation of Ti-Al alloys: a thermodynamic approach. 1949-1951A
- Thermodynamic activities and phase boundaries for the alloys of the solid solution of Co in Ni_3Al . 2183-2188A
- The evolution of solutions: a thermodynamic analysis of mechanical alloying. 2189-2194A
- Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in $\text{Ti}_{75}\text{Ni}_{25}$ alloys. 2223-2232A
- C-Ni and Al-C-Ni phase diagrams and thermodynamic properties of C in the alloys from 1550°C to 2300°C. 2453-2458A
- A new model for the volume fraction of martensitic transformations. 2499-2506A
- Thermogravimetric analysis**
- Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Thermomechanical treatment**
- Study of the β - α phase transformations of a Ti-64 sheet induced from a high-temperature β state and a high-temperature α - β state. 51-61A
- Tensile properties of a thermomechanically processed ductile iron. 1213-1218A
- Microstructural evolution during thermomechanical processing of a Ti-Nb interstitial-free steel just below the A_1 temperature. 1437-1443A
- Thermomechanical treatment, Alloying effects**
- Retained austenite characteristics in thermomechanically processed Si-Mn transformation-induced plasticity steels. 2405-2414A
- Tin, Binary systems**
- Detailed assessment of integral thermodynamic quantities of liquid Bi-Sn alloy solution system. 1081-1087B
- Tin, Castings**
- Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- Tin, Diffusion**
- A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
- Tin, Extraction**
- Extraction of tantalum and niobium from tin slags by chlorination and carbochlorination. 359-369B
- Tin, Reactions (chemical)**
- Interfacial reactions in molten Sn/Cu and In/Cu couples. 927-934B
- Tin base alloys, Directional solidification**
- The occurrence and periodicity of oscillating peritectic microstructures developed during directional solidification. 1543-1552A
- Tin base alloys, Microstructure**
- Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
- Tin base alloys, Thermal properties**
- Detailed assessment of integral thermodynamic quantities of liquid Bi-Sn alloy solution system. 1081-1087B
- Titanium, Alloying additive**
- Weldability and toughness assessment of Ti-microalloyed offshore steel. 199-206A
- Titanium, Alloying elements**
- Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
- Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
- The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Precipitation behavior in ultra-low-carbon steels containing titanium and niobium. 1769-1780A
- Effect of the Ti/N ratio on the hardenability and mechanical properties of a quenched-and-tempered C-Mn-B steel. 2027-2035A
- Titanium, Binary systems**
- Phase equilibria in the titanium-oxygen system. 447-453B
- Titanium, Bonding**
- Phase reaction and diffusion path of the SiC/Ti system. 1385-1390A
- Titanium, Casting**
- The effect of silica-containing binders on the titanium/face coat reaction. 919-926B
- Titanium, Claddings**
- Role of cladding in the notched tensile properties of a titanium matrix composite. 2731-2740A
- Titanium, Crystal growth**
- Discussion of "An analysis of static recrystallization during continuous, rapid heat treatment" and authors' reply. 2763-2765A
- Titanium, Diffusion**
- A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
- On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
- Titanium, Extraction**
- Reduction of ilmenite in a nonequilibrium hydrogen plasma. 517-519F
- Reduction of titanium dioxide in a nonequilibrium hydrogen plasma. 1069-1080B
- Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Titanium, Impurities**
- Thermodynamic properties of titanium and iron in molten silicon. 861-867B
- Titanium, Mechanical properties**
- The entering behavior of environmental gases into the plastic zone around fatigue crack tips in titanium. 1341-1346A
- A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Titanium, Powder technology**
- Effect of copper addition on consolidating Ti_5Si_3 by the elemental powder-metallurgical method. 223-228A
- A flame process for synthesis of unagglomerated, low-oxygen nanoparticles: application to Ti and TiB_2 . 1199-1211B
- Titanium, Ternary systems**
- Nitridation of Ti-Al alloys: a thermodynamic approach. 1949-1951A
- Titanium, Trace elements**
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Titanium base alloys, Acoustic properties**
- Ultrasonic backscattering in duplex microstructures: theory and application to titanium alloys. 91-104A
- Titanium base alloys, Casting**
- The effect of silica-containing binders on the titanium/face coat reaction. 919-926B
- Titanium base alloys, Composite materials**
- Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
- Effects of microstructure on the strength and fatigue behavior of a silicon carbide fiber-reinforced titanium matrix composite and its constituents. 1667-1687A
- Fatigue and fracture of damage-tolerant in situ titanium matrix composites. 2037-2047A
- An investigation of the effects of interfacial microstructure on the fatigue behavior of a four-ply $[\text{Ti}/\text{SiC}]_4$ continuous silicon carbide (SCS-6) fiber-reinforced titanium matrix composite. 2583-2593A
- Role of cladding in the notched tensile properties of a titanium matrix composite. 2731-2740A
- Titanium base alloys, Crystal growth**
- Analysis of grain growth in a two-phase gamma titanium aluminide alloy. 947-954A
- Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Discussion of "An analysis of static recrystallization during continuous, rapid heat treatment" and authors' reply. 2763-2765A
- Titanium base alloys, Heat treatment**
- Minimizing beta flecks in the Ti-17 alloy. 899-903B
- Titanium base alloys, Mechanical properties**
- Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
- Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. I. Simulation. 149-156A
- Effects of crack aspect ratio on the behavior of small surface cracks in fatigue. II. Experiments on a titanium (Ti-8Al) alloy. 157-169A
- Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
- An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Effects of microstructure on the fracture toughness of Ti_3Al -based titanium aluminides. 1357-1365A
- Thermal cycling behavior of as-quenched and aged Ti-6Al-4V alloy. 1809-1814A
- Contact of crack surfaces during fatigue. II. Simulations. 2277-2289A

- Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. 2309-2321A
- Effects of morphology and volume fraction of α_2 phase on the fatigue crack propagation of a Ti-24Al-11Nb alloy. 2527-2536A
- The effect of processing on the hot workability of Ti-48Al-2Nb-2Cr alloys. 2543-2553A
- Understanding the potential and pH dependency of high-strength β -titanium alloy environmental crack initiation. 2645-2656A
- Titanium base alloys, Melting**
Thermodynamics of calcium and oxygen in molten Ti₃Al. 956-959B
- Titanium base alloys, Microstructure**
Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
- Interphase boundary precipitation in a Ti-1.7 at.% Er alloy. 2485-2497A
- Titanium base alloys, Phase transformations**
Study of the β - α phase transformations of a Ti-64 sheet induced from a high-temperature β state and a high-temperature α - β state. 51-61A
- Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
- Building a continuous cooling transformation diagram of β -CEZ alloy by metallography and electrical resistivity measurements. 2467-2475A
- Titanium base alloys, Phases (state of matter)**
Microstructure of second-phase particles in Ti-5Al-4Sn-2Zr-1Mo-0.25Si-1Nd alloy. 1595-1605A
- Titanium base alloys, Powder technology**
Effect of copper addition on consolidating Ti₆Si₃ by the elemental powder-metallurgical method. 223-228A
- Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
- Direct consolidation of γ -TiAl-Mn-Mo from elemental powder mixtures and control of porosity through a basic study of powder reactions. 2723-2729A
- Titanium base alloys, Reactions (chemical)**
Dissolution of hard- α phase inclusions in liquid titanium alloys. 1001-1010B
- Nitridation of Ti-Al alloys: a thermodynamic approach. 1949-1951A
- Titanium base alloys, Refining**
Analysis of multicomponent evaporation in electron beam melting and refining of titanium alloys. 1227-1239B
- Titanium carbide, Composite materials**
On the precipitation of TiC in liquid iron by reactions between different phases. 471-483A
- On the kinetics of carbide precipitation during reaction between graphite and Fe-Ti liquids under microgravity. 707-719A
- Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
- Phase-stress partition during uniaxial tensile loading of a TiC-particulate-reinforced Al composite. 2741-2753A
- Titanium compounds**
Phase equilibria in the titanium-oxygen system. 447-453B
- Titanium compounds, Composite materials**
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- In situ ceramic particle-reinforced aluminum matrix composites fabricated by reaction pressing in the TiO₂(Ti)-Al-B (B₂O₃) systems. 1931-1942A
- Fatigue and fracture of damage-tolerant in situ titanium matrix composites. 2037-2047A
- Titanium compounds, Crystal growth**
Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
- Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
- Analysis of grain growth in a two-phase gamma titanium aluminide alloy. 947-954A
- Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₅Ni₂₅ alloys. 2223-2232A
- Titanium compounds, Mechanical properties**
The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified Li₂ titanium trialuminide. 179-186A
- Mechanisms of ambient temperature fatigue crack growth in Ti-46.5Al-3Nb-2Cr-0.2W. 825-835A
- An investigation of the effect of texture on the high-temperature flow behavior of an orthorhombic titanium aluminide alloy. 885-893A
- Effects of microstructure on the fracture toughness of Ti₃Al-based titanium aluminides. 1357-1365A
- Compressive creep behavior of spray-formed gamma titanium aluminide. 1849-1857A
- Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Plastic-flow and microstructure evolution during hot deformation of a gamma titanium aluminide alloy. 2309-2321A
- Titanium compounds, Microstructure**
Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
- Numerical models of creep and boundary sliding mechanisms in single-phase, dual-phase, and fully lamellar titanium aluminide. 979-989A
- Titanium compounds, Phase transformations**
Thermodynamic study of the low-temperature phase B19' and the martensitic transformation in near-equiatomic Ti-Ni shape memory alloys. 537-544A
- Shock-induced martensitic transformations in near-equiatomic NiTi alloys. 1445-1455A
- Transformations in α_2 - γ titanium aluminide alloys containing molybdenum. II. Heat treatment. 1745-1753A
- Titanium compounds, Powder technology**
Effect of copper addition on consolidating Ti₆Si₃ by the elemental powder-metallurgical method. 223-228A
- Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
- Direct consolidation of γ -TiAl-Mn-Mo from elemental powder mixtures and control of porosity through a basic study of powder reactions. 2723-2729A
- Titanium compounds, Reactions (chemical)**
Thermodynamics of calcium and oxygen in molten Ti₃Al. 956-959B
- Titanium dioxide, Reduction (chemical)**
Reduction of titanium dioxide in a nonequilibrium hydrogen plasma. 1069-1080B
- Titanium nitride, Composite materials**
Indentation creep in nanocrystalline iron-titanium nitride and nickel-titanium nitride alloys prepared by mechanical alloying. 299-306B
- Titanium ores, Reduction (chemical)**
Reduction of titanium dioxide in a nonequilibrium hydrogen plasma. 1069-1080B
- Tool life, Microstructural effects**
The influence of austenite grain size and its distribution on chip deformation and tool life during machining of AISI 304L. 2415-2422A
- Tool steels, Powder technology**
Supersolidus liquid-phase sintering of prealloyed powders. 1553-1567A
- Torsion, Deformation effects**
High strain rate torsional behavior of an ultrahigh carbon steel (1.8% C-1.6% Al) at elevated temperature. 1913-1920A
- Toughness, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
- Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel. 1195-1203A
- Toughness, Microstructural effects**
Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Transgranular fracture, Alloying effects**
Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Transgranular fracture, Cooling effects**
Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals. 1417-1428A
- Transgranular fracture, Diffusion effects**
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
- Transgranular fracture, Microstructural effects**
Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
- Effects of microstructure on the fracture toughness of Ti₃Al-based titanium aluminides. 1357-1365A
- Transition joints, Microstructure**
Computer simulation of multicomponent diffusion in joints of dissimilar steels. 303-308A
- Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Transmission electron microscopy**
Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
- On the effect of plastic deformation on the coarsening of θ -phase precipitation in an Al-Cu alloy. 257-263A
- Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A
- Bainitic chromium-tungsten steels with 3% chromium. 335-345A
- A critical assessment of the mechanistic aspects in Haynes 188 during low-cycle fatigue in the range 25-1000°C. 347-361A
- A study on the subgrain superplasticity of extruded Al-Al₃Ni eutectic alloy. 401-409A

- Development of a pinned wall sensor using cobalt-rich, near-zero magnetostrictive amorphous alloys. 423-434A
- Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- Microstructural features of cracking in autogenous beryllium weldments. 673-680A
- Decagonal quasicrystal and related crystalline phases in Mn-Ga alloys with 52 to 63 at.% Ga. 729-742A
- Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- X-ray and transmission electron microscopy investigation of strain in a nitrated steel: no evidence of plastic deformation. 851-857A
- Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
- Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
- Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A
- The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
- Microstructure and properties of copper and aluminum alloy 3003 heavily worked by equal channel angular extrusion. 1047-1057A
- Fabrication of Al₂O₃-reinforced NiAl composites by a novel in situ route. 1069-1077A
- Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
- Effects of temperature on the fatigue crack growth of an Al-Li 8090 alloy with δ' microstructure. 1089-1092A
- The antiphase boundary energies of L1₂ ordered Ni_{74.5}Pd_{25.5}Al_{25.5} alloy. 1092-1095A
- Interfacial bonding in spray-formed metal matrix composites. 1095-1098A
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- Influence of the amount and morphology of retained austenite on the mechanical properties of an austempered ductile iron. 1143-1156A
- Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel. 1195-1203A
- Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Interfacial reactions in the squeeze-cast (SAFFIL+C)/SAE 329 Al composite. 1251-1259A
- Tribology**
- Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
- TRIP steels, Microstructure**
- Retained austenite characteristics in thermomechanically processed Si-Mn transformation-induced plasticity steels. 2405-2414A
- TRIP steels, Structural hardening**
- Cyclic deformation behavior of a transformation-induced plasticity-aided dual-phase steel. 2637-2644A
- TTT curves**
- Identification and range quantification of steel transformation products by transformation kinetics. 5-14A
- Isothermal precipitation of commercial 3003 Al alloys studied by thermoelectric power. 125-133B
- Analysis of thermoelectric power measurements in the study of precipitation kinetics in 3003 Al alloy. 149-159B
- On the rule of additivity in phase transformation kinetics. 287-291A
- Authors' reply to "The effect of the thermal path to reach isothermal temperature on transformation kinetics" by Dr. I.A. Wierszykowski. 1098A
- The transformation phenomenon in Fe-Mo-C alloys: a solute drag approach. 1625-1631A
- Tubes, Corrosion**
- Microscopic investigation of sensitized Ni-base alloy 600 after laser surface melting. 1223-1231A
- Tubes, Joining**
- Computer simulation of multicomponent diffusion in joints of dissimilar steels. 303-308A
- Tubes, Microstructure**
- Effect of long-term service exposure at elevated temperature on microstructural changes of 5Cr-0.5Mo steels. 1607-1616A
- Tungstates, Reduction (chemical)**
- Kinetic studies of the reduction of FeO and FeWO₄ by hydrogen. 613-618B
- Tungsten, Alloying additive**
- Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Tungsten, Alloying elements**
- The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Tungsten, Composite materials**
- A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
- Dislocations in continuous filament reinforced W/NiAl and Al₂O₃/NiAl composites. 2755-2761A
- Tungsten, Diffusion**
- A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
- Tungsten, Mechanical properties**
- A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Numerical simulation of the x-ray stress analysis technique in polycrystalline materials under elastic loading. 2515-2525A
- Tungsten base alloys, Powder technology**
- Gravitational effects on grain coarsening during liquid-phase sintering. 215-221A
- Undulation of W/matrix interface by resintering of cyclically heat-treated W-Ni-Fe heavy alloys. 485-489A
- A study on the improvement of the sintered density of W-Ni-Mn heavy alloy. 835-839b
- Tungsten steels, Mechanical properties**
- Bainitic chromium-tungsten steels with 3% chromium. 335-345A
- Effects of aluminum content on the mechanical properties of a 9Cr-0.5Mo-1.8W steel. 1195-1203A
- Tungsten steels, Structural hardening**
- Secondary hardening and fracture behavior in alloy steels containing molybdenum, tungsten, and chromium. 775-784A
- Turbine blades, Directional solidification**
- An analytical model for optimal directional solidification using liquid metal cooling. 1377-1383A
- Formation of the Al-rich phase on grain boundary and the creep damage mechanism in directionally solidified Ni-base superalloy. 1945-1949A
- Turbine blades, Mechanical properties**
- The effects of composition and γ/γ' lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Turbulence**
- Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
- Evaluation of six k- ϵ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Establishment time of liquid flow in a bath agitated by bottom gas injection. 605-612B
- The modeling of low phenomena in air-agitated Pachuka tanks. 727-732B
- Turbulent flow**
- Model study of turbulence structure in a bottom blown bath with top slag using conditional sampling. 87-94B
- Mass transfer between solid and liquid in a gas-stirred vessel. 95-102B
- Evaluation of six k- ϵ turbulence model predictions of flow in a continuous casting billet-mold water model using laser Doppler velocimetry measurements. 321-332B
- Twin roll casting**
- A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- Twinning**
- Electron backscattered diffraction investigation of the texture of feathery crystals in aluminum alloys. 207-213A
- Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A
- Twinning, Deformation effects**
- Plastic deformation of hafnium under uniaxial compression. 1479-1487A
- Strain hardening regimes and microstructural evolution during large strain compression of low stacking fault energy fcc alloys that form deformation twins. 1781-1795A
- Ultrasonic vibration**
- Influence of ultrasound in ammoniacal leaching of a copper oxide ore. 721-723B
- Ultrasonics**
- Ultrasonic backscattering in duplex microstructures: theory and application to titanium alloys. 91-104A
- Uranium, Alloying elements**
- The impact of cooling rates on the microstructure of Al-U alloys. 1035-1046A
- Uranium, Diffusion**
- Performance of molybdenum with UF₄ at high temperatures as a wall material for space reactors. 2123-2128A

- Uranium compounds, Environment**
Performance of molybdenum with UF_4 at high temperatures as a wall material for space reactors. 2123-2128A
- Vacuum arc melting, Quality control**
Arc voltage distribution properties as a function of melting current, electrode gap, and CO pressure during vacuum arc remelting. 841-853B
- Vacuum brazing**
Interfacial characteristics for brazing of aluminum matrix composites with Al-12Si filler metals. 2673-2682A
- Valence**
A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
A modified "hole" theory for solute impurity diffusion in liquid metals. 583-593A
- Vanadium, Alloying additive**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
- Vanadium, Composite materials**
Ductile-phase toughening in V-V₅Si in situ composites. 2555-2564A
- Vanadium, Diffusion**
Reaction diffusion and phase equilibria in the V-N system. 837-842A
- Vanadium, Mechanical properties**
A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Vanadium compounds, Composite materials**
Ductile-phase toughening in V-V₅Si in situ composites. 2555-2564A
- Ventilation**
Metal extraction from ores by heap leaching. 529-545B
- Viscoplasticity**
Modeling of rolling texture development in a ferritic chromium steel. 2343-2351A
- Viscosity, Cooling effects**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- Viscosity, Temperature effects**
Experimental studies of the viscosities in the CaO-Fe₂O₃-SiO₂ slags. 827-834B
- Viscous flow, Cooling effects**
Convection and channel formation in solidifying Pb-Sn alloys. 859-866A
- Vitrification**
Synthesis of nanodispersed phases during rapid solidification and crystallization of glasses in Ti₇₂Ni₂₈ alloys. 2223-2232A
- Welds, Diffusion effects**
The effect of hydrogen on the fracture toughness of alloy X-750. 817-823A
- Water quenching**
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
Influence of various heat treatments on the microstructure of polycrystalline IN738LC. 1993-2003A
- Wear rate**
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
Wear characteristics of TiNi shape memory alloys. 1871-1877A
- Wear rate, Microstructural effects**
Tribological properties of aluminum alloy matrix TiB₂ composite prepared by in situ processing. 491-502A
- Wear resistance**
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
- Wear resistance, Coating effects**
Fracture behavior of squeeze-cast aluminum-nickel composites for diesel engine piston rings. 2773-2779A
- Wear resistance, Composition effects**
Solidification structure and abrasion resistance of high chromium white irons. 1315-1328A
Wear behavior of as-cast ZnAl₂/SiC particulate metal-matrix composites under lubricated sliding condition. 1951-1955A
- Wear tests**
Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
- Weathering**
Estimation of atmospheric corrosion of high-strength, low-alloy steels. 1274-1276A
- Weld metal pool**
Mathematical modeling of three-dimensional heat and fluid flow in a moving gas metal arc weld pool. 509-516B
- A mathematical model of gas tungsten arc welding considering the cathode and the free surface of the weld pool. 679-686B
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 687-700B
- Weldability**
An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 687-700B
- Weldability, Alloying effects**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
- Welded joints, Mechanical properties**
Weldability and toughness assessment of Ti-microalloyed off-shore steel. 199-206A
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
Effect of cooling after welding on microstructure and mechanical properties of 12% Cr steel weld metals. 1417-1428A
Further study on the mechanism of the ductile-to-brittle fracture transition in C-Mn base and weld steel. 1689-1698A
CO₂ laser beam welding of 6061-T6 aluminum alloy thin plate. 2657-2662A
- Welded joints, Microstructure**
An experimental and theoretical study of heat-affected zone austenite reformation in three duplex stainless steels. 277-285A
Particle fracture, retention, and fluid flow in metal matrix composite friction joints. 2371-2384A
- Welding parameters**
The effects of process variables on pulsed Nd:YAG laser spot welds. II. AA 1100 aluminum and comparison to AISI 409 stainless steel. 687-700B
- Weldments, Materials selection**
Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Weldments, Mechanical properties**
Microstructural features of cracking in autogenous beryllium weldments. 673-680A
Modeling Charpy impact energy property changes using a Bayesian method. 1181-1193A
- Wettability**
Surface tension and wettability studies of liquid Fe-Ni-O alloys. 465-472B
- Whisker composites, Mechanical properties**
Fatigue and fracture of damage-tolerant in situ titanium matrix composites. 2037-2047A
Simulation of crack propagating in discontinuously reinforced metal matrix composite. 2149-2157A
Microfracture behavior of Al-SiC composites under dynamic loading. 2162-2170A
- White Iron, Mechanical properties**
Solidification structure and abrasion resistance of high chromium white irons. 1315-1328A
- Widmanstatten structure**
Plate-shaped transformation products in zirconium-base alloys. 2201-2216A
- Widmanstatten structure, Composition effects**
Transformations in $\alpha_2+\gamma$ titanium aluminide alloys containing molybdenum. I. Solidification behavior. 1735-1743A
- Wire, Bonding**
A microstructural study of dislocation substructures formed in metal foil substrates during ultrasonic wire bonding. 2663-2671A
- Wire drawing**
Controlled drawing to produce desirable hardness and microstructural gradients in alloy 302 wire. 363-375A
- Work rolls, Mechanical properties**
Correlation of microstructure and thermal fatigue property of three work rolls. 2595-2608A
- X ray diffraction**
Recovery of copper through decontamination of synthetic solutions using modified barks. 13-23B
Formation of α' iron nitride in FeN martensite: nitrogen vacancies, iron-atom displacements, and misfit-strain energy. 63-77A
Effect of copper addition on consolidating Ti₃Si₃ by the elemental powder-metallurgical method. 223-228A
A synchrotron x-ray diffraction study of the local residual strains around a single inclusion in an Al/W metal-matrix composite. 237-243A
Compaction and characterization of mechanically alloyed nanocrystalline titanium aluminides. 293-302A

- Nucleation and phase selection in undercooled Fe-Cr-Ni melts. II. Containerless solidification experiments. 461-469A
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Solid-solution structure and the weakly first-order displacive transformation in Fe-Pd alloys. 527-536A
- Aging and tempering behavior of iron-nickel-carbon and iron-carbon martensite. 545-561A
- Experimental study of the kinetics of transient liquid phase solidification reaction in electroplated gold-tin layers on copper. 699-706A
- X-ray and transmission electron microscopy investigation of strain in a nitrided steel: no evidence of plastic deformation. 851-857A
- Consolidation of nanostructured metal powders by rapid forging: processing, modeling, and subsequent mechanical behavior. 895-904A
- Microstructure and properties of duplex δ -Al₃(Ti, V)/ β -Ti, V alloys. 927-938A
- Aging effects in a Cu-12Al-5Ni-2Mn-1Ti shape memory alloy. 955-967A
- The effects of composition and γ/γ lattice parameter mismatch on the critical resolved shear stresses for octahedral and cube slip in NiAlCrX alloys. 1011-1020A
- Mechanically activated carbothermic reduction of ilmenite. 1115-1121A
- Ball-milling-induced crystallization and ball-milling effect on thermal crystallization kinetics in an amorphous FeMoSiB alloy. 1123-1131A
- X-ray study of phase transformations in martensitic Ni-Al alloys. 1133-1142A
- Yield strength**
- Modelling the mechanical behavior of tantalum. 113-122A
- Room-temperature deformation behavior of a directionally solidified β (B2)-(Ni-Fe-Al) intermetallic alloy. 135-147A
- Tensile flow and work-hardening behavior of a Ti-modified austenitic stainless steel. 171-178A
- Fabrication of Al₂O₃-reinforced Ni₃Al composites by a novel in situ route. 1069-1077A
- Microstructure and mechanical behavior of the NiAl-TiC in situ composite. 1079-1087A
- Modeling solid solution strengthening in nickel alloys. 1329-1335A
- On the evaluation of efficiency parameters in processing maps. 1581-1582A
- Modeling the flow behavior of a medium carbon microalloyed steel under hot working conditions. 2233-2244A
- Yield strength, Composition effects**
- Bainitic chromium-tungsten steels with 3% chromium. 335-345A
- Hydrogen embrittlement of Ni-Cr-Fe alloys. 655-663A
- Yield strength, Deformation effects**
- Strain distribution in copper tensile specimens prestrained in rolling. 1169-1179A
- Yield strength, Heating effects**
- Deformation, fracture, and mechanical properties of low-temperature-tempered martensite in SAE 43xx steels. 377-387A
- Orientation dependence of microfracture behavior in a dual-phase high-strength low-alloy steel. 504-509A
- Yield strength, High temperature effects**
- High-temperature tensile deformation and thermal cracking of ferritic spheroidal graphite cast iron. 325-333A
- Yield strength, Microstructural effects**
- Fatigue and fracture behavior of a fine-grained lamellar TiAl alloy. 79-90A
- The effect of hydrostatic pressurization on the microhardness and compressive behavior of the porous manganese-modified Li₂ titanium trialuminide. 179-186A
- Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic Ti-alloy-based composite. 309-323A
- Effects of test temperature, grain size, and alloy additions on the cleavage fracture stress of polycrystalline niobium. 389-399A
- Yield strength, Temperature effects**
- A thermal elastic-plastic finite-element analysis to roll-life prediction on the twin roll strip continuous casting process. 1213-1225B
- Creep and low-cycle fatigue behavior of ferritic Fe-24Cr-4Al alloy in the dynamic strain aging regime: effect of aluminum addition. 1347-1355A
- Yttrium, Ternary systems**
- The Ce-Mg-Y system. 265-276A
- Yttrium base alloys, Crystal lattices**
- The Ce-Mg-Y system. 265-276A
- Yttrium compounds, Reactions (chemical)**
- The effect of silica-containing binders on the titanium/face coat reaction. 919-926B
- Zinc, Binary systems**
- Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Zinc, Diffusion**
- A theory for solute impurity diffusion, which considers Engel-Brewer valences, balancing the Fermi energy levels of solvent and solute, and differences in zero point energy. 563-582A
- Zinc, Extraction**
- Spouted bed electrowinning of zinc. I. Laboratory-scale electrowinning experiments. 59-68B
- Spouted bed electrowinning of zinc. II. Investigations of the dynamics of particles in large thin spouted beds. 69-79B
- Rate control of the flash reduction of zinc calcines. 201-207B
- Steady-state modeling of zinc-ferrite hot-acid leaching. 701-711B
- The behavior of thallium during jarosite precipitation. 765-776B
- Thermodynamic optimization of the systems PbO-SiO₂, PbO-ZnO, ZnO-SiO₂ and PbO-ZnO-SiO₂. 1011-1018B
- Zinc, Mechanical properties**
- A thermodynamic analysis of the empirical power relationships for creep rate and rupture time. 1831-1842A
- Zinc, Reactions (chemical)**
- Effect of substrate grain size on iron-zinc reaction kinetics during hot-dip galvanizing. 2683-2694A
- Zinc, Recovering**
- Leaching of marine manganese nodules by acidophilic bacteria growing on elemental sulfur. 25-32B
- Zinc, Ternary systems**
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- A thermodynamic description of the Al-Mg-Zn system. 1725-1734A
- Discussion of "Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases" and author's reply. 2433-2435A
- Zinc base alloys, Casting**
- Effects of squeeze casting on the properties of Zn-Bi monotectic alloy. 1509-1515A
- Zinc base alloys, Coatings**
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Zinc base alloys, Composite materials**
- Wear behavior of as-cast ZnAl27/SiC particulate metal-matrix composites under lubricated sliding condition. 1951-1955A
- Zinc base alloys, Mechanical properties**
- Dry sliding wear response of some bearing alloys as influenced by the nature of microconstituents and sliding conditions. 809-815A
- Room-temperature superplasticity in a Zn-0.3 wt.% Al alloy. 1711-1713A
- Zinc base alloys, Microstructure**
- Prediction of dendrite arm spacings in unsteady- and steady-state heat flow of unidirectionally solidified binary alloys. 651-663B
- Zinc compounds, Chemical analysis**
- Mössbauer effect study of mechanically alloyed Γ and Γ_1 Fe-Zn intermediate phases. 743-748A
- Zinc compounds, Powder technology**
- Kinetics and phase transformation evaluation of Fe-Zn-Al mechanically alloyed phases. 517-525A
- Zinc compounds, Reactions (chemical)**
- The solubility of ZnO and ZnAl₂O₄ in cryolite melts. 1099-1101B
- Zinc compounds, Reduction (chemical)**
- Rate control of the flash reduction of zinc calcines. 201-207B
- Steady-state modeling of zinc-ferrite hot-acid leaching. 701-711B
- Zinc compounds, Synthesis**
- Kinetics of zinc ferrite formation in the rate deceleration period. 671-677B
- Zinc ores, Reduction (chemical)**
- Steady-state modeling of zinc-ferrite hot-acid leaching. 701-711B
- The behavior of thallium during jarosite precipitation. 765-776B
- Zirconium, Alloying additive**
- Effect of test temperature, grain size, and alloy additions on the low-temperature fracture toughness of polycrystalline niobium. 2297-2307A
- Reduction and removal of martensite stabilization in Cu-Zn-Al-Mn-Zr shape memory alloys. 2765-2767A
- Zirconium, Alloying elements**
- Galvanic cell measurements on supersaturated activities of oxygen in Fe-Al-M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) melts. 251-258B
- Effect of alloying element M (M=C, Te, Mn, Cr, Si, Ti, Zr, and Ce) on supersaturation during aluminum deoxidation of Fe-Al-M melts. 259-264B
- Zirconium, Mechanical properties**
- Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A
- Zirconium base alloys, Mechanical properties**
- Dislocation structures in zirconium and zircaloy-4 fatigued at different temperatures. 1021-1033A

Zirconium base alloys, Phase transformations

Plate-shaped transformation products in zirconium-base alloys.

2201-2218A

*** Zirconium compounds, Binary systems**Discussion of "Use of solid electrolyte galvanic cells to determine the activity of CaO in the CaO-ZrO₂ system and stan-dard Gibbs free energies of formation of CaZrO₃ from CaO and ZrO₂".

723-725B

Zirconium compounds, Environment

Dynamics of solid/liquid interface shape evolution near an insoluble particle—an x-ray transmission microscopy investigation.

2129-2135A

